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**APPENDIX C**

**Emissions, Air Quality, and Health Risk**

**for Ten Toxic Air Contaminants**

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*Appendix C: Emissions, Air Quality, and Health Risk for Ten Toxic Air Contaminants*

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## Introduction

This appendix contains TAC emissions data for all counties in California. It also contains air quality and health risk data for counties and individual sites within California's five most populated air basins: South Coast Air Basin, San Francisco Bay Area Air Basin, San Joaquin Valley Air Basin, San Diego Air Basin, and Sacramento Valley Air Basin. It is important to note that some counties are located in more than one air basin. For these counties, the data are for that portion of the county located in each air basin. As in Chapter 5, ten toxic air contaminants are included: acetaldehyde, benzene, 1,3-butadiene, carbon tetrachloride, chromium (hexavalent), *para*-dichlorobenzene, formaldehyde, methylene chloride, perchloroethylene, and diesel particulate matter (diesel PM). These are the ten TACs for which ambient air quality data, primarily, indicate the most substantial health risk in California. There may be other TACs that pose a substantial risk, but for which data are not available, or which have not been identified as a concern.

The countywide emissions data represent tons per year for the 2001 emission inventory year. The data for stationary sources

include emissions data associated with the air toxics "Hot Spots" Program. The toxic air contaminant emissions for each area-wide and mobile source category are calculated by applying a speciation profile, maintained by ARB staff, to the total organic gas and total particulate matter criteria pollutant emissions associated with that category.

For all source categories associated with diesel fuel combustion, all "PM" emitted from these sources was considered "diesel PM." The area-wide source emission estimates were made by either the local air pollution control districts or the ARB staff. These estimates have been speciated for toxics. The other mobile source emission estimates are primarily from ARB's OFFROAD model, speciated for toxics. For the categories not currently included in the model, the emission estimates have been developed by either local districts or ARB staff. Districts may also provide estimates for categories usually developed by ARB staff. Finally, the on-road mobile source emission estimates are based on the current model, EMFAC 2001, version 2.08. Again, the emission estimates have been speciated for toxics.

Readers may note that the diesel PM emission estimates differ from those presented in the ARB's October 2000 report titled: *"Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles"* (Diesel Risk Reduction Plan). This is because they incorporate more recent data. More specifically, the on-road mobile source emissions cited in the Diesel Risk Reduction Plan are based on an earlier version of EMFAC 2001 (EMFAC 1.99(f) 6/26/00) and the other mobile inventory includes revised estimates for ship diesel PM emissions. We will continue to refine estimates of diesel PM emissions as we develop the regulations identified in the Diesel Risk Reduction Plan. Even with these differences, the statewide emission estimates for diesel PM compare favorably.

For stationary sources, this almanac uses the estimates prepared for the Diesel Risk Reduction Plan. These estimates differ somewhat from those currently presented on the ARB web site. As discussed above, we will review the methodology for estimating stationary source emissions and include revised estimates as appropriate.

In addition to the emissions data, the air quality and health risk data cover the time period of 1990 through 2000. It is important to note that the data provided reflect concentrations meas-

ured at a specific location or, in the case of the air basin summary data, spatially averaged concentrations. Therefore, the ambient concentrations and health risks for other locations may be higher or lower.

## *County Emissions (tons/year) for Ten Toxic Air Contaminants by Air Basin*

### Great Basin Valleys Air Basin

| TAC                          | Alpine | Inyo | Mono |
|------------------------------|--------|------|------|
| Acetaldehyde                 | 7      | 16   | 32   |
| Benzene                      | 25     | 27   | 60   |
| 1,3-Butadiene                | 6      | 5    | 14   |
| Carbon Tetrachloride         | 0      | 0    | 0    |
| Chromium (Hexavalent)        | <.01   | <.01 | 0.02 |
| <i>para</i> -Dichlorobenzene | <1     | <1   | <1   |
| Formaldehyde                 | 24     | 31   | 74   |
| Methylene Chloride           | <1     | 2    | 1    |
| Perchloroethylene            | <1     | 11   | 7    |
| Diesel PM                    | 1      | 18   | 15   |

Table C-1

### Lake County Air Basin

| TAC                          | Lake |
|------------------------------|------|
| Acetaldehyde                 | 44   |
| Benzene                      | 127  |
| 1,3-Butadiene                | 22   |
| Carbon Tetrachloride         | 0    |
| Chromium (Hexavalent)        | <.01 |
| <i>para</i> -Dichlorobenzene | 3    |
| Formaldehyde                 | 103  |
| Methylene Chloride           | 8    |
| Perchloroethylene            | 40   |
| Diesel PM                    | 51   |

Table C-2

## *County Emissions (tons/year) for Ten Toxic Air Contaminants by Air Basin*

### Lake Tahoe Air Basin

| TAC                          | El Dorado <sup>1</sup> | Placer <sup>1</sup> |
|------------------------------|------------------------|---------------------|
| Acetaldehyde                 | 39                     | 18                  |
| Benzene                      | 49                     | 22                  |
| 1,3-Butadiene                | 11                     | 4                   |
| Carbon Tetrachloride         | <.01                   | 0                   |
| Chromium (Hexavalent)        | <.01                   | <.01                |
| <i>para</i> -Dichlorobenzene | 2                      | <1                  |
| Formaldehyde                 | 78                     | 30                  |
| Methylene Chloride           | 5                      | 3                   |
| Perchloroethylene            | 23                     | 8                   |
| Diesel PM                    | 32                     | 7                   |

1. This Air Basin includes only a portion of this county.

Table C-3

### Mojave Desert Air Basin

| TAC                          | Kern <sup>1</sup> | Los Angeles <sup>1</sup> | Riverside <sup>1</sup> | San Bernardino <sup>1</sup> |
|------------------------------|-------------------|--------------------------|------------------------|-----------------------------|
| Acetaldehyde                 | 106               | 68                       | 6                      | 155                         |
| Benzene                      | 103               | 156                      | 37                     | 333                         |
| 1,3-Butadiene                | 38                | 26                       | 2                      | 59                          |
| Carbon Tetrachloride         | 0.02              | 0                        | 0                      | <.01                        |
| Chromium (Hexavalent)        | 0.31              | 0.02                     | <.01                   | 0.08                        |
| <i>para</i> -Dichlorobenzene | 5                 | 17                       | 1                      | 24                          |
| Formaldehyde                 | 315               | 184                      | 47                     | 472                         |
| Methylene Chloride           | 13                | 96                       | 4                      | 77                          |
| Perchloroethylene            | 52                | 69                       | 4                      | 197                         |
| Diesel PM                    | 120               | 249                      | 12                     | 395                         |

1. This Air Basin includes only a portion of this county.

Table C-4

## *County Emissions (tons/year) for Ten Toxic Air Contaminants by Air Basin*

### Mountain Counties Air Basin

| TAC                   | Amador | Calaveras | El Dorado <sup>1</sup> | Mariposa | Nevada | Placer <sup>1</sup> | Plumas | Sierra | Tuolumne |
|-----------------------|--------|-----------|------------------------|----------|--------|---------------------|--------|--------|----------|
| Acetaldehyde          | 35     | 48        | 84                     | 26       | 112    | 17                  | 68     | 12     | 62       |
| Benzene               | 68     | 102       | 124                    | 55       | 118    | 27                  | 159    | 40     | 129      |
| 1,3-Butadiene         | 18     | 27        | 23                     | 12       | 24     | 6                   | 47     | 12     | 29       |
| Carbon Tetrachloride  | 0      | 0         | 0                      | 0        | 0      | 0                   | 0      | 0      | 0        |
| Chromium (Hexavalent) | <.01   | <.01      | <.01                   | <.01     | <.01   | <.01                | <.01   | <.01   | <.01     |
| para-Dichlorobenzene  | 2      | 2         | 7                      | <1       | 5      | 1                   | 1      | <1     | 3        |
| Formaldehyde          | 75     | 109       | 153                    | 61       | 186    | 33                  | 177    | 39     | 146      |
| Methylene Chloride    | 5      | 5         | 16                     | 2        | 20     | 6                   | 3      | <1     | 9        |
| Perchloroethylene     | 20     | 27        | 68                     | 10       | 22     | 19                  | 12     | 2      | 33       |
| Diesel PM             | 32     | 39        | 56                     | 16       | 66     | 24                  | 47     | 3      | 52       |

1. This Air Basin includes only a portion of this county.

Table C-5

### North Central Coast Air Basin

| TAC                   | Monterey | San Benito | Santa Cruz |
|-----------------------|----------|------------|------------|
| Acetaldehyde          | 103      | 17         | 67         |
| Benzene               | 347      | 40         | 156        |
| 1,3-Butadiene         | 63       | 13         | 21         |
| Carbon Tetrachloride  | <.01     | 0          | 0          |
| Chromium (Hexavalent) | <.01     | <.01       | <.01       |
| para-Dichlorobenzene  | 21       | 3          | 13         |
| Formaldehyde          | 291      | 39         | 142        |
| Methylene Chloride    | 74       | 8          | 51         |
| Perchloroethylene     | 240      | 29         | 175        |
| Diesel PM             | 283      | 60         | 137        |

Table C-6

## *County Emissions (tons/year) for Ten Toxic Air Contaminants by Air Basin*

### **North Coast Air Basin**

| TAC                          | Del Norte | Humboldt | Mendocino | Sonoma <sup>1</sup> | Trinity |
|------------------------------|-----------|----------|-----------|---------------------|---------|
| Acetaldehyde                 | 23        | 94       | 71        | 30                  | 22      |
| Benzene                      | 34        | 135      | 122       | 110                 | 40      |
| 1,3-Butadiene                | 17        | 29       | 20        | 16                  | 15      |
| Carbon Tetrachloride         | 0         | 0        | 0         | 0                   | 0       |
| Chromium (Hexavalent)        | <.01      | <.01     | <.01      | <.01                | <.01    |
| <i>para</i> -Dichlorobenzene | 2         | 7        | 5         | 3                   | <1      |
| Formaldehyde                 | 39        | 179      | 144       | 79                  | 46      |
| Methylene Chloride           | 5         | 18       | 14        | 12                  | 2       |
| Perchloroethylene            | 22        | 78       | 58        | 11                  | 9       |
| Diesel PM                    | 39        | 213      | 159       | 82                  | 12      |

1. This Air Basin includes only a portion of this county.

Table C-7

### **Northeast Plateau Air Basin**

| TAC                          | Lassen | Modoc | Siskiyou |
|------------------------------|--------|-------|----------|
| Acetaldehyde                 | 63     | 22    | 84       |
| Benzene                      | 110    | 33    | 131      |
| 1,3-Butadiene                | 24     | 6     | 67       |
| Carbon Tetrachloride         | 0      | 0     | 0        |
| Chromium (Hexavalent)        | <.01   | <.01  | <.01     |
| <i>para</i> -Dichlorobenzene | 2      | <1    | 2        |
| Formaldehyde                 | 138    | 36    | 164      |
| Methylene Chloride           | 4      | 1     | 6        |
| Perchloroethylene            | 21     | 7     | 26       |
| Diesel PM                    | 61     | 50    | 109      |

Table C-8

## *County Emissions (tons/year) for Ten Toxic Air Contaminants by Air Basin*

### Sacramento Valley Air Basin

| TAC                   | Butte | Colusa | Glenn | Placer <sup>1</sup> | Sacramento | Shasta | Solano <sup>1</sup> | Sutter | Tehama | Yolo | Yuba |
|-----------------------|-------|--------|-------|---------------------|------------|--------|---------------------|--------|--------|------|------|
| Acetaldehyde          | 104   | 16     | 25    | 81                  | 241        | 146    | 31                  | 35     | 50     | 54   | 45   |
| Benzene               | 240   | 66     | 93    | 153                 | 669        | 209    | 142                 | 128    | 59     | 178  | 86   |
| 1,3-Butadiene         | 42    | 19     | 18    | 28                  | 100        | 48     | 16                  | 21     | 12     | 20   | 22   |
| Carbon Tetrachloride  | 0     | 0      | 0     | 0                   | 0.06       | 0      | <.01                | 0      | <.01   | 0    | 0    |
| Chromium (Hexavalent) | <.01  | <.01   | <.01  | <.01                | 0.03       | <.01   | <.01                | 0.02   | <.01   | <.01 | <.01 |
| para-Dichlorobenzene  | 11    | 1      | 1     | 11                  | 62         | 9      | 6                   | 4      | 3      | 8    | 4    |
| Formaldehyde          | 265   | 64     | 90    | 179                 | 597        | 295    | 83                  | 77     | 91     | 117  | 123  |
| Methylene Chloride    | 33    | 3      | 3     | 47                  | 178        | 23     | 16                  | 10     | 7      | 25   | 8    |
| Perchloroethylene     | 22    | 12     | 16    | 108                 | 461        | 112    | 60                  | 48     | 11     | 93   | 36   |
| Diesel PM             | 222   | 74     | 88    | 172                 | 807        | 210    | 107                 | 148    | 107    | 224  | 73   |

1. This Air Basin includes only a portion of this county.

Table C-9

### Salton Sea Air Basin

| TAC                   | Imperial | Riverside <sup>1</sup> |
|-----------------------|----------|------------------------|
| Acetaldehyde          | 102      | 54                     |
| Benzene               | 388      | 199                    |
| 1,3-Butadiene         | 43       | 29                     |
| Carbon Tetrachloride  | 0        | 0                      |
| Chromium (Hexavalent) | 0.02     | <.01                   |
| para-Dichlorobenzene  | 8        | 16                     |
| Formaldehyde          | 301      | 154                    |
| Methylene Chloride    | 19       | 60                     |
| Perchloroethylene     | 86       | 79                     |
| Diesel PM             | 234      | 172                    |

1. This Air Basin includes only a portion of this county.

Table C-10

## *County Emissions (tons/year) for Ten Toxic Air Contaminants by Air Basin*

### **San Diego Air Basin**

| TAC                          | San Diego |
|------------------------------|-----------|
| Acetaldehyde                 | 567       |
| Benzene                      | 1471      |
| 1,3-Butadiene                | 264       |
| Carbon Tetrachloride         | <.01      |
| Chromium (Hexavalent)        | 0.22      |
| <i>para</i> -Dichlorobenzene | 150       |
| Formaldehyde                 | 1542      |
| Methylene Chloride           | 378       |
| Perchloroethylene            | 1668      |
| Diesel PM                    | 1693      |

Table C-11

### **San Francisco Bay Area Air Basin**

| TAC                          | Alameda | Contra Costa | Marin | Napa | San Francisco | San Mateo | Santa Clara | Solano <sup>1</sup> | Sonoma <sup>1</sup> |
|------------------------------|---------|--------------|-------|------|---------------|-----------|-------------|---------------------|---------------------|
| Acetaldehyde                 | 311     | 179          | 56    | 37   | 159           | 163       | 278         | 175                 | 101                 |
| Benzene                      | 677     | 538          | 180   | 109  | 321           | 381       | 859         | 213                 | 234                 |
| 1,3-Butadiene                | 102     | 78           | 29    | 16   | 47            | 70        | 127         | 71                  | 35                  |
| Carbon Tetrachloride         | 0.03    | 1.46         | <.01  | <.01 | 0             | <.01      | <.01        | <.01                | 0.02                |
| Chromium (Hexavalent)        | 0.02    | <.01         | <.01  | <.01 | <.01          | <.01      | 0.01        | 0.20                | <.01                |
| <i>para</i> -Dichlorobenzene | 74      | 49           | 13    | 7    | 40            | 37        | 89          | 15                  | 20                  |
| Formaldehyde                 | 657     | 520          | 150   | 94   | 380           | 445       | 737         | 539                 | 228                 |
| Methylene Chloride           | 312     | 140          | 37    | 17   | 112           | 149       | 855         | 39                  | 76                  |
| Perchloroethylene            | 467     | 248          | 89    | 23   | 284           | 258       | 422         | 54                  | 67                  |
| Diesel PM                    | 950     | 701          | 158   | 109  | 821           | 391       | 908         | 160                 | 300                 |

1. This Air Basin includes only a portion of this county.

Table C-12

## *County Emissions (tons/year) for Ten Toxic Air Contaminants by Air Basin*

### San Joaquin Valley Air Basin

| TAC                   | Fresno | Kern <sup>1</sup> | Kings | Madera | Merced | San Joaquin | Stanislaus | Tulare |
|-----------------------|--------|-------------------|-------|--------|--------|-------------|------------|--------|
| Acetaldehyde          | 269    | 290               | 112   | 65     | 85     | 178         | 133        | 160    |
| Benzene               | 971    | 1158              | 234   | 163    | 259    | 445         | 345        | 370    |
| 1,3-Butadiene         | 98     | 104               | 43    | 27     | 44     | 66          | 62         | 116    |
| Carbon Tetrachloride  | <.01   | <.01              | 0     | 0      | 0      | 0           | 0          | 0      |
| Chromium (Hexavalent) | 0.17   | 0.04              | 0.02  | <.01   | 0.01   | 0.09        | 0.03       | <.01   |
| para-Dichlorobenzene  | 43     | 34                | 7     | 7      | 11     | 30          | 24         | 20     |
| Formaldehyde          | 647    | 1221              | 334   | 173    | 208    | 442         | 321        | 381    |
| Methylene Chloride    | 146    | 73                | 15    | 18     | 30     | 91          | 71         | 53     |
| Perchloroethylene     | 160    | 86                | 16    | 15     | 38     | 80          | 63         | 43     |
| Diesel PM             | 938    | 679               | 142   | 176    | 301    | 694         | 480        | 523    |

1. This Air Basin includes only a portion of this county.

Table C-13

### South Central Coast Air Basin

| TAC                   | San Luis Obispo | Santa Barbara | Ventura |
|-----------------------|-----------------|---------------|---------|
| Acetaldehyde          | 88              | 104           | 134     |
| Benzene               | 214             | 378           | 435     |
| 1,3-Butadiene         | 40              | 51            | 56      |
| Carbon Tetrachloride  | 0               | 0.07          | 0.02    |
| Chromium (Hexavalent) | <.01            | 0.03          | 0.02    |
| para-Dichlorobenzene  | 14              | 21            | 40      |
| Formaldehyde          | 217             | 383           | 349     |
| Methylene Chloride    | 43              | 117           | 170     |
| Perchloroethylene     | 43              | 78            | 83      |
| Diesel PM             | 254             | 299           | 430     |

Table C-14

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## *County Emissions (tons/year) for Ten Toxic Air Contaminants by Air Basin*

### **South Coast Air Basin**

| TAC                          | Los Angeles <sup>1</sup> | Orange | Riverside <sup>1</sup> | San Bernardino <sup>1</sup> |
|------------------------------|--------------------------|--------|------------------------|-----------------------------|
| Acetaldehyde                 | 1166                     | 422    | 221                    | 253                         |
| Benzene                      | 3928                     | 1307   | 562                    | 646                         |
| 1,3-Butadiene                | 630                      | 192    | 100                    | 114                         |
| Carbon Tetrachloride         | 1.83                     | 0.08   | 0.02                   | <.01                        |
| Chromium (Hexavalent)        | 0.49                     | 0.05   | 0.12                   | 0.02                        |
| <i>para</i> -Dichlorobenzene | 483                      | 155    | 64                     | 69                          |
| Formaldehyde                 | 3394                     | 1125   | 574                    | 639                         |
| Methylene Chloride           | 2562                     | 1009   | 248                    | 462                         |
| Perchloroethylene            | 3088                     | 1537   | 274                    | 399                         |
| Diesel PM                    | 4338                     | 1731   | 817                    | 726                         |

1. This Air Basin includes only a portion of this county.

Table C-15

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## Air Quality and Health Risk

The air quality and health risk data in the following tables cover the time period of 1990 through 2000. Annual average concentrations and health risks are listed by site for California's five most populated air basins. Data are included for the ten TACs posing the most substantial health risk in California, based primarily on ambient air quality data. These compounds are: acetaldehyde, benzene, 1,3-butadiene, carbon tetrachloride, chromium (hexavalent), *para*-dichlorobenzene, formaldehyde, methylene chloride, perchloroethylene, and diesel particulate matter.

The ambient data for all TACs except diesel particulate matter are based on concentrations measured at sites in California's TAC monitoring network. For diesel particulate matter, the ARB made a preliminary estimation of concentrations for the State's fifteen air basins using a particulate matter-based exposure method. The method uses the ARB emission inventory's PM<sub>10</sub> database, ambient PM<sub>10</sub> monitoring data, and the results from several studies with chemical speciation of ambient data. These data were used, along with receptor modeling techniques,

to estimate statewide outdoor concentrations of diesel particulate matter. Details on the method and the resulting estimates can be found in the ARB report entitled: "*Proposed Identification of Diesel Exhaust as a Toxic Air Contaminant -- Appendix III Part A Exposure Assessment*," (April 1998).

Numerous factors influence the ambient measurements, and a number of assumptions are embodied in the summary statistics. These factors are described in Chapter 1 under the heading "*Interpreting the Emission and Air Quality Statistics*." These factors must be considered when using the statistics presented here. Finally, it is important to note that the data provided reflect concentrations measured at a specific location or, in the case of the air basin summary data, spatially averaged concentrations. Therefore, the ambient concentrations and health risks for other locations may be higher or lower.

## South Coast Air Basin

| COUNTY / SITE                                    | TAC                   | Annual Average Concentration* |      |      |      |      |      |      |      |      |      |      |                              | Health Risk** |      |      |      |      |      |      |      |      |      |     |
|--|-----------------------|-------------------------------|------|------|------|------|------|------|------|------|------|------|------------------------------|---------------|------|------|------|------|------|------|------|------|------|-----|
|  |                       | 1990                          | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 1990                         | 1991          | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 |     |
| LOS ANGELES<br>Azusa                             | Acetaldehyde          |                               |      |      |      |      |      |      |      |      |      | 1.10 |                              |               |      |      |      |      |      |      |      |      |      | 5   |
|  | Benzene               |                               |      |      |      |      |      |      |      |      |      | 0.69 |                              |               |      |      |      |      |      |      |      |      |      | 64  |
|  | 1,3-Butadiene         |                               |      |      |      |      |      |      |      |      |      | 0.15 |                              |               |      |      |      |      |      |      |      |      |      | 55  |
|  | Carbon Tetrachloride  |                               |      |      |      |      |      |      |      |      |      | 0.09 |                              |               |      |      |      |      |      |      |      |      |      | 24  |
|  | Chromium (Hexavalent) |                               |      |      |      |      |      |      |      |      |      | 0.12 |                              |               |      |      |      |      |      |      |      |      |      | 19  |
|  | para-Dichlorobenzene  |                               |      |      |      |      |      |      |      |      |      | 0.10 |                              |               |      |      |      |      |      |      |      |      |      | 7   |
|  | Formaldehyde          |                               |      |      |      |      |      |      |      |      |      | 3.05 |                              |               |      |      |      |      |      |      |      |      |      | 22  |
|  | Methylene Chloride    |                               |      |      |      |      |      |      |      |      |      | 1.32 |                              |               |      |      |      |      |      |      |      |      |      | 5   |
|  | Perchloroethylene     |                               |      |      |      |      |      |      |      |      |      | 0.18 |                              |               |      |      |      |      |      |      |      |      |      | 7   |
|  | Diesel PM             |                               |      |      |      |      |      |      |      |      |      |      | No Monitoring Data Available |               |      |      |      |      |      |      |      |      |      |     |
| Total Health Risk                                |                       |                               |      |      |      |      |      |      |      |      |      |      |                              |               |      |      |      |      |      |      |      |      |      | 208 |
| LOS ANGELES<br>Burbank-<br>West Palm Avenue      | Acetaldehyde          | 3.16                          | 3.89 |      | 3.06 | 2.46 | 0.79 |      |      | 1.94 | 2.70 | 1.70 | 15                           | 19            |      | 15   | 12   | 4    |      |      |      | 9    | 13   | 8   |
|  | Benzene               | 4.79                          | 3.91 | 3.44 | 2.63 | 3.33 | 2.45 | 1.91 | 1.48 | 1.66 | 1.64 | 1.27 | 444                          | 362           | 319  | 244  | 308  | 227  | 177  | 137  | 154  | 151  | 117  |     |
|  | 1,3-Butadiene         | 0.78                          | 0.62 | 0.73 | 0.75 | 0.75 | 0.61 | 0.51 | 0.42 | 0.48 | 0.48 | 0.35 | 294                          | 234           | 272  | 282  | 283  | 227  | 192  | 158  | 182  | 181  | 130  |     |
|  | Carbon Tetrachloride  | 0.14                          | 0.13 |      |      |      | 0.10 | 0.08 |      | 0.11 |      | 0.09 | 37                           | 35            |      |      |      | 28   | 22   |      |      | 30   |      | 25  |
|  | Chromium (Hexavalent) |                               |      |      | 0.65 | 0.37 | 0.43 | 1.24 |      | 0.23 | 0.20 | 0.19 |                              |               |      | 97   | 55   | 64   | 186  |      |      | 34   | 29   | 28  |
|  | para-Dichlorobenzene  |                               | 0.23 | 0.22 | 0.19 | 0.14 | 0.20 | 0.10 | 0.11 |      |      | 0.13 |                              |               | 15   | 15   | 12   | 9    | 13   | 7    | 7    |      | 8    |     |
|  | Formaldehyde          | 4.05                          | 3.59 |      | 3.66 | 3.92 | 4.58 |      |      | 4.72 | 6.07 | 4.14 | 30                           | 26            |      | 27   | 29   | 34   |      |      | 35   | 45   | 30   |     |
|  | Methylene Chloride    | 3.25                          | 1.69 | 1.42 | 2.01 | 1.94 | 1.82 | 1.41 | 1.11 | 1.07 |      | 0.80 | 11                           | 6             | 5    | 7    | 7    | 6    | 5    | 4    | 4    |      | 3    |     |
|  | Perchloroethylene     | 1.19                          | 0.79 | 0.61 | 0.62 | 0.66 | 0.49 | 0.44 | 0.37 | 0.50 |      | 0.37 | 48                           | 31            | 24   | 25   | 26   | 19   | 18   | 15   | 20   |      | 15   |     |
|  | Diesel PM             |                               |      |      |      |      |      |      |      |      |      |      | No Monitoring Data Available |               |      |      |      |      |      |      |      |      |      |     |
| Total Health Risk                                |                       |                               |      |      |      |      |      |      |      |      |      |      | 879                          | 728           | 732  | 667  | 738  | 744  | 421  | 321  | 468  | 419  | 364  |     |
| LOS ANGELES<br>Los Angeles-<br>North Main Street | Acetaldehyde          | 2.68                          | 2.78 | 2.5  | 2.89 | 2.35 | 1.28 | 2.33 |      | 1.43 | 0.84 | 13   | 13                           | 12            | 14   | 11   | 6    | 11   |      |      |      | 7    | 4    |     |
|  | Benzene               | 3.50                          | 3.25 | 2.97 | 2.54 | 2.45 | 2.24 | 1.86 |      | 1.36 | 1.50 | 1.04 | 324                          | 301           | 275  | 235  | 227  | 207  | 173  |      | 126  | 139  | 97   |     |
|  | 1,3-Butadiene         | 0.60                          | 0.55 | 0.64 | 0.73 | 0.59 | 0.60 | 0.54 |      | 0.42 | 0.43 | 0.30 | 226                          | 206           | 242  | 276  | 221  | 225  | 204  |      | 158  | 162  | 111  |     |
|  | Carbon Tetrachloride  | 0.14                          | 0.13 |      |      |      | 0.10 | 0.08 |      | 0.11 |      | 0.10 | 36                           | 35            |      |      |      | 27   | 21   |      | 30   |      | 26   |     |
|  | Chromium (Hexavalent) |                               |      |      | 0.24 | 0.27 | 0.23 | 0.17 |      | 0.11 | 0.13 |      |                              |               |      | 36   | 40   | 35   | 25   |      |      | 16   | 19   |     |
|  | para-Dichlorobenzene  |                               | 0.19 | 0.22 | 0.19 | 0.16 | 0.19 | 0.12 |      |      | 0.16 |      | 13                           | 14            | 12   | 10   | 13   | 8    |      |      |      | 11   |      |     |
|  | Formaldehyde          | 3.50                          | 3.00 | 2.30 | 3.23 | 3.54 | 4.13 | 5.87 |      | 3.88 | 2.42 | 26   | 22                           | 17            | 24   | 26   | 30   | 43   |      |      | 29   | 18   |      |     |
|  | Methylene Chloride    | 1.28                          | 2.72 | 0.68 | 1.05 | 1.06 | 1.51 | 1.10 |      | 0.80 | 1.20 | 0.68 | 4                            | 9             | 2    | 4    | 4    | 5    | 4    | 3    | 4    | 2    |      |     |
|  | Perchloroethylene     | 0.55                          | 0.60 | 0.54 | 0.59 | 0.50 | 0.57 | 0.50 |      | 0.23 |      | 0.19 | 22                           | 24            | 21   | 24   | 20   | 23   | 20   |      | 9    |      | 7    |     |
|  | Diesel PM             |                               |      |      |      |      |      |      |      |      |      |      | No Monitoring Data Available |               |      |      |      |      |      |      |      |      |      |     |
| Total Health Risk                                |                       |                               |      |      |      |      |      |      |      |      |      |      | 651                          | 623           | 583  | 625  | 559  | 571  | 509  |      | 326  | 357  | 295  |     |

\* Concentrations for Chromium (Hexavalent) are expressed as ng/m<sup>3</sup>, and concentrations for Diesel PM are expressed as ug/m<sup>3</sup>. Concentrations for all other TACs are expressed as ppb.

\*\* Health Risk represents the number of excess cancer cases per million people based on a lifetime (70-year) exposure to the annual average concentration. Total Health Risk represents only those compounds listed in this table and only those with data for the year. There may be other significant compounds for which monitoring and/or health risk information are not available.

## South Coast Air Basin

| COUNTY / SITE                               | TAC                   | Annual Average Concentration* |      |      |      |      |      |      |                              |      |      |      |      |      |      |      |      |      |      | Health Risk** |      |      |      |     |     |  |  |   |  |  |
|---|-----------------------|-------------------------------|------|------|------|------|------|------|------------------------------|------|------|------|------|------|------|------|------|------|------|---------------|------|------|------|-----|-----|--|--|---|--|--|
|   |                       | 1990                          | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997                         | 1998 | 1999 | 2000 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997          | 1998 | 1999 | 2000 |     |     |  |  |   |  |  |
| LOS ANGELES<br>North Long Beach             | Acetaldehyde          | 2.49                          | 2.52 |      | 2.36 | 2.18 | 0.81 |      | 1.43                         |      | 1.16 | 12   | 12   | 11   | 11   | 4    |      |      |      | 7             |      |      |      |     |     |  |  | 6 |  |  |
|   | Benzene               | 3.53                          | 2.45 | 2.60 | 1.99 | 2.04 | 1.69 |      | 1.24                         | 1.16 | 1.11 | 1.00 | 327  | 227  | 241  | 185  | 188  | 157  |      | 115           | 108  | 103  | 92   |     |     |  |  |   |  |  |
|   | 1,3-Butadiene         | 0.59                          | 0.44 | 0.52 | 0.58 | 0.45 | 0.45 |      | 0.36                         | 0.34 | 0.32 | 0.28 | 223  | 165  | 197  | 216  | 168  | 169  |      | 137           | 127  | 121  | 104  |     |     |  |  |   |  |  |
|   | Carbon Tetrachloride  | 0.14                          | 0.13 |      |      | 0.10 |      |      | 0.12                         |      | 0.10 | 37   | 34   |      |      |      |      |      |      | 26            |      | 31   |      | 26  |     |  |  |   |  |  |
|   | Chromium (Hexavalent) |                               |      | 0.44 | 0.34 | 0.22 | 0.25 |      | 0.15                         | 0.11 | 0.12 | 0.12 |      |      | 66   | 51   | 33   | 38   |      | 22            | 16   | 18   | 18   |     |     |  |  |   |  |  |
|   | para-Dichlorobenzene  |                               | 0.17 | 0.26 | 0.19 | 0.12 | 0.17 |      | 0.16                         |      |      | 0.13 |      | 11   | 17   | 13   | 8    | 11   |      | 10            |      |      |      | 8   |     |  |  |   |  |  |
|   | Formaldehyde          | 2.97                          | 2.76 |      | 3.22 | 3.06 | 3.29 |      | 3.68                         |      | 2.88 | 22   | 20   |      | 24   | 23   | 24   |      |      | 27            |      |      |      | 21  |     |  |  |   |  |  |
|   | Methylene Chloride    | 2.05                          | 0.88 | 1.00 | 1.15 | 0.84 | 0.98 |      | 0.74                         | 0.60 | 0.65 | 7    | 3    | 3    | 4    | 3    | 3    |      |      | 3             | 2    |      |      | 2   |     |  |  |   |  |  |
|   | Perchloroethylene     | 0.48                          | 0.36 | 0.35 | 0.43 | 0.32 | 0.32 |      | 0.23                         | 0.19 | 0.17 | 0.19 | 19   | 14   | 14   | 17   | 13   | 13   |      | 9             | 8    |      |      | 7   |     |  |  |   |  |  |
|   | Diesel PM             |                               |      |      |      |      |      |      | No Monitoring Data Available |      |      |      |      |      |      |      |      |      |      |               |      |      |      |     |     |  |  |   |  |  |
| Total Health Risk                           |                       |                               |      |      |      |      |      |      |                              |      |      |      | 647  | 486  | 538  | 521  | 447  | 445  |      | 330           | 292  | 242  | 284  |     |     |  |  |   |  |  |
| RIVERSIDE<br>Riverside-<br>Rubidoux         | Acetaldehyde          | 1.87                          | 2.54 | 1.86 | 2.19 | 2.08 | 0.89 | 1.84 |                              |      | 1.36 | 1.49 | 9    | 12   | 9    | 11   | 10   | 4    | 9    |               |      |      | 7    | 7   |     |  |  |   |  |  |
|   | Benzene               | 2.55                          | 2.22 | 1.90 | 1.77 | 2.01 | 1.45 | 1.03 |                              |      | 0.87 | 0.85 | 236  | 206  | 176  | 164  | 186  | 134  | 95   |               | 80   | 79   |      |     |     |  |  |   |  |  |
|   | 1,3-Butadiene         | 0.34                          | 0.31 | 0.29 | 0.38 | 0.36 | 0.33 | 0.27 |                              |      | 0.21 | 0.19 | 128  | 117  | 110  | 143  | 136  | 125  | 100  |               | 78   | 72   |      |     |     |  |  |   |  |  |
|   | Carbon Tetrachloride  | 0.13                          | 0.14 |      |      | 0.10 | 0.08 |      |                              |      | 0.10 | 34   | 36   |      |      |      |      |      |      | 27            | 21   |      |      | 25  |     |  |  |   |  |  |
|   | Chromium (Hexavalent) |                               |      | 0.33 | 0.33 | 0.36 | 0.38 | 0.22 |                              |      | 0.19 | 0.35 |      |      | 50   | 50   | 55   | 56   | 33   |               | 29   | 52   |      |     |     |  |  |   |  |  |
|   | para-Dichlorobenzene  |                               | 0.13 | 0.13 | 0.16 | 0.12 | 0.17 | 0.11 |                              |      | 0.14 |      | 9    | 8    | 10   | 8    | 11   | 7    |      | 9             | 9    |      | 9    |     |     |  |  |   |  |  |
|   | Formaldehyde          | 1.75                          | 2.70 | 1.53 | 2.73 | 2.50 | 2.65 | 4.15 |                              |      | 3.55 | 3.17 | 13   | 20   | 11   | 20   | 18   | 19   | 31   |               | 26   | 23   |      |     |     |  |  |   |  |  |
|   | Methylene Chloride    | 0.69                          | 0.60 | 1.10 | 0.93 | 0.98 | 0.83 |      |                              |      | 0.58 | 0.69 |      | 2    | 2    | 4    | 3    | 3    | 3    |               | 2    | 2    |      |     |     |  |  |   |  |  |
|   | Perchloroethylene     | 0.24                          | 0.28 | 0.20 | 0.20 | 0.19 | 0.18 | 0.18 |                              |      | 0.13 |      | 9    | 11   | 8    | 8    | 8    | 7    | 7    |               | 7    |      | 5    |     |     |  |  |   |  |  |
|   | Diesel PM             |                               |      |      |      |      |      |      | No Monitoring Data Available |      |      |      |      |      |      |      |      |      |      |               |      |      |      |     |     |  |  |   |  |  |
| Total Health Risk                           |                       |                               |      |      |      |      |      |      |                              |      |      |      | 429  | 413  | 374  | 410  | 424  | 386  | 306  |               |      |      |      | 222 | 274 |  |  |   |  |  |
| SAN BERNARDINO<br>Fontana-<br>Arrow Highway | Acetaldehyde          |                               |      |      |      |      |      |      |                              |      |      |      |      |      |      |      |      |      |      |               |      |      |      |     |     |  |  |   |  |  |
|   | Benzene               |                               |      |      |      |      |      |      |                              |      |      |      |      |      |      |      |      |      |      |               |      |      |      |     |     |  |  |   |  |  |
|   | 1,3-Butadiene         |                               |      |      |      |      |      |      |                              |      |      |      | 0.98 |      |      |      |      |      |      |               |      |      |      |     |     |  |  |   |  |  |
|   | Carbon Tetrachloride  |                               |      |      |      |      |      |      |                              |      |      |      | 0.24 |      |      |      |      |      |      |               |      |      |      |     |     |  |  |   |  |  |
|   | Chromium (Hexavalent) |                               |      |      |      |      |      |      |                              |      |      |      | 0.11 |      |      |      |      |      |      |               |      |      |      |     |     |  |  |   |  |  |
|   | para-Dichlorobenzene  |                               |      |      |      |      |      |      |                              |      |      |      |      |      |      |      |      |      |      |               |      |      |      |     |     |  |  |   |  |  |
|   | Formaldehyde          |                               |      |      |      |      |      |      |                              |      |      |      |      |      |      |      |      |      |      |               |      |      |      |     |     |  |  |   |  |  |
|   | Methylene Chloride    |                               |      |      |      |      |      |      |                              |      |      |      | 0.59 |      |      |      |      |      |      |               |      |      |      |     |     |  |  |   |  |  |
|   | Perchloroethylene     |                               |      |      |      |      |      |      |                              |      |      |      | 0.18 |      |      |      |      |      |      |               |      |      |      |     |     |  |  |   |  |  |
| Total Health Risk                           |                       |                               |      |      |      |      |      |      |                              |      |      |      |      |      |      |      |      |      |      |               |      |      |      |     |     |  |  |   |  |  |
| 222   |                       |                               |      |      |      |      |      |      |                              |      |      |      |      |      |      |      |      |      |      |               |      |      |      |     |     |  |  |   |  |  |

\* Concentrations for Chromium (Hexavalent) are expressed as ng/m<sup>3</sup>, and concentrations for Diesel PM are expressed as ug/m<sup>3</sup>. Concentrations for all other TACs are expressed as ppb.

\*\* Health Risk represents the number of excess cancer cases per million people based on a lifetime (70-year) exposure to the annual average concentration. Total Health Risk represents only those compounds listed in this table and only those with data for the year. There may be other significant compounds for which monitoring and/or health risk information are not available.

Table C-16 (continued)

## South Coast Air Basin

| COUNTY / SITE                                | TAC                   | Annual Average Concentration* |      |      |      |       |      |      |      |                              |      |       |        | Health Risk** |      |      |      |      |      |      |      |      |      |     |     |
|--|-----------------------|-------------------------------|------|------|------|-------|------|------|------|------------------------------|------|-------|--------|---------------|------|------|------|------|------|------|------|------|------|-----|-----|
|  |                       | 1990                          | 1991 | 1992 | 1993 | 1994  | 1995 | 1996 | 1997 | 1998                         | 1999 | 2000  | 1990   | 1991          | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 |     |     |
| SAN BERNARDINO<br>Upland-San Bernardino Road | Acetaldehyde          | 2.12                          | 3.28 | 2.36 | 2.84 | 2.42  | 1.09 | 2.13 |      |                              |      |       | 10     | 16            | 11   | 14   | 12   | 5    | 10   |      |      |      |      |     |     |
|  | Benzene               | 2.73                          | 2.70 | 2.14 | 1.92 | 2.15  | 1.62 | 1.11 | 1.11 |                              |      |       | 253    | 250           | 198  | 178  | 199  | 150  | 103  | 103  |      |      |      |     |     |
|  | 1,3-Butadiene         | 0.35                          | 0.34 | 0.31 | 0.39 | 0.34  | 0.31 | 0.26 | 0.25 |                              |      |       | 131    | 128           | 116  | 147  | 126  | 117  | 97   | 95   |      |      |      |     |     |
|  | Carbon Tetrachloride  | 0.13                          | 0.14 |      | 0.10 | 0.10  | 0.08 |      |      |                              |      |       | 35     | 36            |      | 27   |      | 26   | 20   |      |      |      |      |     |     |
|  | Chromium (Hexavalent) |                               |      | 0.22 | 0.16 | 0.16  | 0.20 | 0.12 |      |                              |      |       |        |               | 33   | 24   | 24   | 30   | 17   |      |      |      |      |     |     |
|  | para-Dichlorobenzene  |                               | 0.13 | 0.14 | 0.14 | 0.10  | 0.13 | 0.10 | 0.14 |                              |      |       |        |               | 9    | 9    | 9    | 7    | 9    | 7    | 9    |      |      |     |     |
|  | Formaldehyde          | 2.35                          | 3.34 | 1.98 | 3.25 | 2.67  | 3.21 | 5.20 |      |                              |      |       | 17     | 25            | 15   | 24   | 20   | 24   | 38   |      |      |      |      |     |     |
|  | Methylene Chloride    | 1.41                          | 1.59 | 0.82 | 0.87 | 0.72  | 1.13 | 0.66 | 1.70 |                              |      |       | 5      | 6             | 3    | 3    | 3    | 4    | 2    | 6    |      |      |      |     |     |
|  | Perchloroethylene     | 0.42                          | 0.72 | 0.36 | 0.40 | 0.29  | 0.26 | 0.20 | 0.21 |                              |      |       | 17     | 29            | 15   | 16   | 11   | 11   | 8    | 8    |      |      |      |     |     |
|  | Diesel PM             |                               |      |      |      |       |      |      |      | No Monitoring Data Available |      |       |        |               |      |      |      |      |      |      |      |      |      |     |     |
| Total Health Risk                            |                       |                               |      |      |      |       |      |      |      |                              |      |       | 468    | 499           | 400  | 442  | 402  | 376  | 302  | 221  |      |      |      |     |     |
| BASIN SUMMARY                                | Acetaldehyde          | 2.46                          | 3.00 | 2.46 | 2.67 | 2.30  | 0.97 | 2.08 | 1.77 | 1.54                         | 1.63 | 1.26  | 12     | 15            | 12   | 13   | 11   | 5    | 10   | 9    | 7    | 8    | 6    |     |     |
|  | Benzene               | 3.42                          | 2.91 | 2.61 | 2.17 | 2.40  | 1.89 | 1.45 | 1.34 | 1.25                         | 1.20 | 0.97  | 317    | 269           | 242  | 201  | 222  | 175  | 134  | 124  | 116  | 111  | 90   |     |     |
|  | 1,3-Butadiene         | 0.53                          | 0.45 | 0.50 | 0.57 | 0.50  | 0.46 | 0.39 | 0.38 | 0.35                         | 0.33 | 0.25  | 200    | 170           | 187  | 212  | 187  | 173  | 146  | 142  | 133  | 123  | 94   |     |     |
|  | Carbon Tetrachloride  | 0.14                          | 0.13 |      | 0.11 |       | 0.10 | 0.08 |      | 0.11                         |      | 0.10  | 36     | 35            |      | 28   |      | 27   | 21   |      | 30   |      | 25   |     |     |
|  | Chromium (Hexavalent) |                               |      | 0.39 | 0.29 | 0.29  | 0.46 | 0.18 | 0.17 | 0.15                         | 0.14 | 0.18  |        |               | 59   | 43   | 43   | 69   | 27   | 25   | 22   | 22   | 27   |     |     |
|  | para-Dichlorobenzene  |                               | 0.17 | 0.19 | 0.17 | 0.13  | 0.17 | 0.11 | 0.13 |                              |      | 0.13  |        | 11            | 13   | 11   | 8    | 11   | 7    | 9    |      |      | 9    |     |     |
|  | Formaldehyde          | 2.92                          | 3.08 | 2.22 | 3.22 | 3.14  | 3.57 | 5.06 | 4.47 | 3.79                         | 4.06 | 3.13  | 22     | 23            | 16   | 24   | 23   | 26   | 37   | 33   | 28   | 30   | 23   |     |     |
|  | Methylene Chloride    | 1.86                          | 1.51 | 0.90 | 1.23 | 1.10  | 1.28 | 0.95 | 1.14 | 0.85                         | 0.92 | 0.83  | 6      | 5             | 3    | 4    | 4    | 4    | 3    | 4    | 3    | 3    | 3    |     |     |
|  | Perchloroethylene     | 0.58                          | 0.55 | 0.41 | 0.45 | 0.39  | 0.36 | 0.32 | 0.27 | 0.26                         |      | 0.21  | 23     | 22            | 16   | 18   | 16   | 15   | 13   | 11   | 10   |      | 8    |     |     |
|  | Diesel PM***          | (3.6)                         |      |      |      | (2.7) |      |      |      |                              |      | (2.4) | (1080) |               | 616  | 550  | 548  | 554  | 514  | 505  | 398  | 357  | 349  | 297 | 285 |
| Average Basin Health Risk                    |                       |                               |      |      |      |       |      |      |      |                              |      |       |        |               |      |      |      |      |      |      |      |      |      |     |     |

\* Concentrations for Chromium (Hexavalent) are expressed as ng/m<sup>3</sup>, and concentrations for Diesel PM are expressed as ug/m<sup>3</sup>. Concentrations for all other TACs are expressed as ppb.

\*\* Health Risk represents the number of excess cancer cases per million people based on a lifetime (70-year) exposure to the annual average concentration. Total Health Risk represents only those compounds listed in this table and only those with data for the year. There may be other significant compounds for which monitoring and/or health risk information are not available.

\*\*\* The Diesel PM concentrations are estimates based on receptor modeling. Because data are not available for all years, Diesel PM is not included in the Average Basin Health Risk number.

Table C-16 (continued)

## San Francisco Bay Area Air Basin

| COUNTY / SITE                                | TAC                   | Annual Average Concentration* |      |      |      |      |      |      |      |      |      |      |      | Health Risk** |      |      |      |      |      |      |      |      |      |     |
|--|-----------------------|-------------------------------|------|------|------|------|------|------|------|------|------|------|------|---------------|------|------|------|------|------|------|------|------|------|-----|
|  |                       | 1990                          | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 1990 | 1991          | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 |     |
| ALAMEDA<br>Fremont-<br>Chapel Way            | Acetaldehyde          | 1.28                          | 1.60 | 1.02 | 1.28 | 1.23 | 0.35 | 0.88 | 0.65 | 0.72 |      |      | 6    | 8             | 5    | 6    | 6    | 2    | 4    | 3    | 4    |      |      |     |
|  | Benzene               | 1.92                          | 1.67 | 1.21 | 1.35 | 1.25 | 1.24 | 0.58 |      | 0.76 | 0.61 | 0.53 | 178  | 155           | 112  | 125  | 116  | 115  | 54   |      | 71   | 57   | 49   |     |
|  | 1,3-Butadiene         | 0.28                          | 0.26 | 0.19 | 0.32 | 0.25 | 0.27 | 0.20 |      | 0.24 | 0.18 | 0.14 | 106  | 97            | 72   | 120  | 95   | 101  | 75   |      | 90   | 66   | 51   |     |
|  | Carbon Tetrachloride  | 0.13                          | 0.13 |      | 0.11 |      | 0.10 | 0.08 |      |      |      | 0.10 | 35   | 34            |      | 28   |      | 27   | 20   |      |      | 25   |      |     |
|  | Chromium (Hexavalent) |                               |      | 0.20 | 0.19 | 0.21 | 0.20 | 0.11 |      | 0.10 | 0.10 | 0.10 |      |               | 30   | 28   | 32   | 30   | 16   |      | 15   | 15   | 16   |     |
|  | para-Dichlorobenzene  |                               |      | 0.11 | 0.11 | 0.10 | 0.12 | 0.10 |      |      |      | 0.10 |      |               | 7    | 7    | 7    | 8    | 7    |      |      | 7    |      |     |
|  | Formaldehyde          | 1.84                          | 1.98 | 1.30 | 1.37 | 1.78 | 2.02 | 2.16 | 1.79 | 1.96 |      |      |      | 14            | 15   | 10   | 10   | 13   | 15   | 16   | 13   | 15   |      |     |
|  | Methylene Chloride    | 0.76                          | 0.58 | 0.52 | 0.83 | 0.50 | 0.62 | 0.50 |      |      |      | 0.50 | 3    | 2             | 2    | 3    | 2    | 2    | 2    | 2    |      | 2    |      |     |
|  | Perchloroethylene     | 0.19                          | 0.21 | 0.13 | 0.11 | 0.09 | 0.12 | 0.07 |      |      |      | 0.08 | 8    | 8             | 5    | 5    | 3    | 5    | 3    |      |      | 3    |      |     |
|  | Diesel PM             |                               |      |      |      |      |      |      |      |      |      |      |      |               |      |      |      |      |      |      |      |      |      |     |
| Total Health Risk                            |                       | No Monitoring Data Available  |      |      |      |      |      |      |      |      |      |      |      | 350           | 319  | 243  | 332  | 274  | 305  | 197  | 16   | 195  | 138  | 153 |
| CONTRA COSTA<br>Concord-<br>2975 Treat Blvd. | Acetaldehyde          | 1.41                          |      |      | 1.39 | 1.46 | 0.62 | 0.86 | 0.76 |      | 0.87 |      | 7    |               |      | 7    | 7    | 3    | 4    | 4    |      |      | 4    |     |
|  | Benzene               | 1.84                          | 1.58 | 1.41 | 1.13 | 1.08 | 1.09 | 0.48 | 0.56 | 0.57 | 0.57 |      | 171  | 147           | 130  | 105  | 100  | 101  | 44   | 52   | 53   | 53   |      |     |
|  | 1,3-Butadiene         | 0.32                          | 0.27 | 0.25 | 0.31 | 0.23 | 0.24 | 0.15 | 0.18 | 0.19 | 0.16 |      | 118  | 100           | 95   | 114  | 87   | 91   | 56   | 66   | 72   | 58   |      |     |
|  | Carbon Tetrachloride  | 0.13                          | 0.13 |      | 0.11 |      | 0.10 | 0.08 |      |      |      | 34   | 33   |               | 29   |      | 27   | 22   |      |      |      |      |      |     |
|  | Chromium (Hexavalent) |                               |      | 0.19 | 0.18 | 0.21 | 0.11 | 0.11 |      | 0.10 |      |      |      |               | 28   | 27   | 32   | 16   | 17   |      | 15   |      |      |     |
|  | para-Dichlorobenzene  |                               |      | 0.15 | 0.13 | 0.14 | 0.13 | 0.13 | 0.14 |      |      |      |      |               | 10   | 8    | 9    | 9    | 8    | 9    |      |      |      |     |
|  | Formaldehyde          | 1.99                          |      |      | 1.99 | 1.69 | 2.21 | 2.30 | 2.05 |      | 2.64 |      | 15   |               | 15   | 12   | 16   | 17   | 15   |      | 19   |      |      |     |
|  | Methylene Chloride    | 0.67                          | 0.51 | 0.66 | 0.54 | 0.54 | 0.55 | 0.55 | 0.50 |      |      |      | 2    | 2             | 2    | 2    | 2    | 2    | 2    | 2    |      |      |      |     |
|  | Perchloroethylene     | 0.34                          | 0.42 | 0.39 | 0.20 | 0.10 | 0.15 | 0.08 | 0.10 |      |      | 13   | 17   | 16            | 8    | 4    | 6    | 3    | 4    |      |      |      |      |     |
|  | Diesel PM             |                               |      |      |      |      |      |      |      |      |      |      |      |               |      |      |      |      |      |      |      |      |      |     |
| Total Health Risk                            |                       | No Monitoring Data Available  |      |      |      |      |      |      |      |      |      |      |      | 360           | 299  | 253  | 316  | 248  | 287  | 172  | 169  | 125  | 149  |     |
| CONTRA COSTA<br>Richmond-<br>13th Street     | Acetaldehyde          |                               |      | 0.78 |      |      | 0.92 | 0.36 | 0.59 |      |      |      |      |               | 4    |      | 4    | 2    | 3    |      |      |      |      |     |
|  | Benzene               | 1.92                          | 1.54 | 1.76 | 1.70 | 1.44 | 1.00 |      |      |      |      |      | 177  | 143           | 163  | 157  | 133  | 92   |      |      |      |      |      |     |
|  | 1,3-Butadiene         | 0.27                          | 0.26 | 0.39 | 0.31 | 0.30 | 0.25 |      |      |      |      |      | 102  | 98            | 148  | 116  | 113  | 94   |      |      |      |      |      |     |
|  | Carbon Tetrachloride  | 0.12                          |      | 0.11 |      | 0.10 | 0.08 |      |      |      |      |      | 33   |               | 29   |      | 25   | 21   |      |      |      |      |      |     |
|  | Chromium (Hexavalent) |                               |      | 0.19 |      | 0.15 | 0.26 | 0.13 |      |      |      |      |      | 28            |      | 23   | 39   | 19   |      |      |      |      |      |     |
|  | para-Dichlorobenzene  | 0.14                          | 0.12 | 0.12 | 0.10 | 0.12 | 0.19 |      |      |      |      |      | 9    | 8             | 8    | 7    | 8    | 13   |      |      |      |      |      |     |
|  | Formaldehyde          |                               |      | 1.08 |      | 1.32 | 2.22 | 4.27 |      |      |      |      |      | 8             |      | 10   | 16   | 31   |      |      |      |      |      |     |
|  | Methylene Chloride    | 0.62                          | 0.54 | 0.67 | 0.50 | 0.54 | 0.65 |      |      |      |      |      | 2    | 2             | 2    | 2    | 2    | 2    |      |      |      |      |      |     |
|  | Perchloroethylene     | 0.15                          | 0.09 | 0.09 | 0.06 | 0.04 | 0.03 |      |      |      |      |      | 6    | 4             | 4    | 2    | 2    | 1    |      |      |      |      |      |     |
|  | Diesel PM             |                               |      |      |      |      |      |      |      |      |      |      |      |               | 329  | 295  | 354  | 321  | 340  | 276  |      |      |      |     |
| Total Health Risk                            |                       | No Monitoring Data Available  |      |      |      |      |      |      |      |      |      |      |      |               |      |      |      |      |      |      |      |      |      |     |

\* Concentrations for Chromium (Hexavalent) are expressed as ng/m<sup>3</sup>, and concentrations for Diesel PM are expressed as ug/m<sup>3</sup>. Concentrations for all other TACs are expressed as ppb.

\*\* Health Risk represents the number of excess cancer cases per million people based on a lifetime (70-year) exposure to the annual average concentration. Total Health Risk represents only those compounds listed in this table and only those with data for the year. There may be other significant compounds for which monitoring and/or health risk information are not available.

Table C-17

## San Francisco Bay Area Air Basin

| COUNTY / SITE                                      | TAC                   | Annual Average Concentration* |      |      |      |      |      |      |      |      |      |      |      | Health Risk** |      |      |      |      |      |      |      |      |      |     |    |    |    |
|--|-----------------------|-------------------------------|------|------|------|------|------|------|------|------|------|------|------|---------------|------|------|------|------|------|------|------|------|------|-----|----|----|----|
|  |                       | 1990                          | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 1990 | 1991          | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 |     |    |    |    |
| CONTRA COSTA<br>San Pablo-<br>El Portal            | Acetaldehyde          |                               |      |      |      |      |      |      |      |      |      | 0.55 |      |               |      |      |      |      |      |      |      |      | 3    |     |    |    |    |
|  | Benzene               |                               |      |      |      |      |      |      |      |      |      | 0.56 | 0.42 |               |      |      |      |      |      |      |      |      | 52   | 39  |    |    |    |
|  | 1,3-Butadiene         |                               |      |      |      |      |      |      |      |      |      | 0.15 | 0.12 |               |      |      |      |      |      |      |      |      | 56   | 45  |    |    |    |
|  | Carbon Tetrachloride  |                               |      |      |      |      |      |      |      |      |      | 0.10 |      |               |      |      |      |      |      |      |      |      | 15   |     |    |    |    |
|  | Chromium (Hexavalent) |                               |      |      |      |      |      |      |      |      |      |      |      |               |      |      |      |      |      |      |      |      |      |     |    |    |    |
|  | para-Dichlorobenzene  |                               |      |      |      |      |      |      |      |      |      |      |      |               |      |      |      |      |      |      |      |      |      |     |    |    |    |
|  | Formaldehyde          |                               |      |      |      |      |      |      |      |      |      | 1.24 |      |               |      |      |      |      |      |      |      |      | 9    |     |    |    |    |
|  | Methylene Chloride    |                               |      |      |      |      |      |      |      |      |      |      |      |               |      |      |      |      |      |      |      |      |      |     |    |    |    |
|  | Perchloroethylene     |                               |      |      |      |      |      |      |      |      |      |      |      |               |      |      |      |      |      |      |      |      |      |     |    |    |    |
|  | Diesel PM             |                               |      |      |      |      |      |      |      |      |      |      |      |               |      |      |      |      |      |      |      |      |      |     |    |    |    |
| No Monitoring Data Available                       |                       |                               |      |      |      |      |      |      |      |      |      |      |      |               |      |      |      |      |      |      |      |      |      |     |    |    |    |
| Total Health Risk                                  |                       |                               |      |      |      |      |      |      |      |      |      |      |      |               |      |      |      |      |      |      |      |      | 108  | 111 |    |    |    |
| SAN FRANCISCO<br>San Francisco-<br>Arkansas Street | Acetaldehyde          | 1.32                          |      |      |      |      |      |      |      |      |      | 0.98 | 0.40 | 0.75          | 0.54 | 0.65 | 0.48 | 6    |      |      |      |      | 5    | 2   | 4  | 3  |    |
|  | Benzene               |                               | 1.49 | 1.25 |      |      |      |      |      |      |      | 1.07 | 0.95 | 0.53          | 0.51 | 0.63 | 0.17 | 0.22 | 0.13 | 138  | 116  | 99   | 88   | 49  | 48 | 59 | 61 |
|  | 1,3-Butadiene         |                               | 0.25 | 0.23 |      |      |      |      |      |      |      | 0.26 | 0.23 | 0.18          | 0.17 | 0.22 | 0.17 | 0.13 | 0.10 | 95   | 88   | 97   | 85   | 68  | 62 | 81 | 65 |
|  | Carbon Tetrachloride  |                               |      |      |      |      |      |      |      |      |      | 0.12 |      | 0.10          | 0.08 |      |      |      | 33   |      |      | 26   | 21   |     | 25 |    |    |
|  | Chromium (Hexavalent) |                               |      |      |      |      |      |      |      |      |      | 0.19 | 0.18 | 0.25          | 0.12 | 0.13 | 0.10 | 0.12 |      | 29   | 26   | 37   | 18   | 19  | 15 |    | 18 |
|  | para-Dichlorobenzene  |                               |      |      |      |      |      |      |      |      |      | 0.15 | 0.13 | 0.10          | 0.15 | 0.12 | 0.12 | 0.11 |      | 10   | 9    | 7    | 10   | 8   | 8  |    | 7  |
|  | Formaldehyde          | 1.71                          |      |      |      |      |      |      |      |      |      | 1.33 | 1.58 | 1.62          | 1.45 |      |      |      | 13   |      |      | 10   | 12   | 12  | 11 |    |    |
|  | Methylene Chloride    |                               | 3.22 | 0.88 |      |      |      |      |      |      |      | 0.60 | 0.63 | 0.66          | 0.50 |      |      |      | 11   | 3    | 2    | 2    | 2    | 2   |    | 2  |    |
|  | Perchloroethylene     |                               |      | 0.23 | 0.13 |      |      |      |      |      |      | 0.11 | 0.09 | 0.08          | 0.07 |      |      |      | 9    | 5    | 4    | 4    | 3    | 3   |    |    |    |
|  | Diesel PM             |                               |      |      |      |      |      |      |      |      |      |      |      |               |      |      |      |      |      |      |      |      |      |     |    |    |    |
| Total Health Risk                                  |                       |                               |      |      |      |      |      |      |      |      |      |      |      |               |      |      |      |      |      |      |      |      |      |     |    |    |    |
| SANTA CLARA<br>San Jose-<br>4th Street             | Acetaldehyde          | 1.53                          | 1.55 | 1.41 | 1.58 | 1.27 | 0.35 | 1.04 | 0.97 | 0.77 | 0.93 | 0.79 |      | 7             | 8    | 7    | 8    | 6    | 2    | 5    | 5    | 4    | 4    | 4   |    |    |    |
|  | Benzene               | 3.02                          | 2.44 | 2.03 | 1.89 | 1.88 | 1.55 | 0.97 | 0.93 | 1.04 | 0.73 | 0.70 | 280  | 226           | 188  | 175  | 174  | 144  | 89   | 86   | 97   | 68   | 65   |     |    |    |    |
|  | 1,3-Butadiene         | 0.55                          | 0.39 | 0.44 | 0.49 | 0.39 | 0.35 | 0.31 | 0.29 | 0.29 | 0.23 | 0.19 | 207  | 145           | 164  | 182  | 145  | 131  | 117  | 108  | 110  | 85   | 72   |     |    |    |    |
|  | Carbon Tetrachloride  | 0.13                          | 0.13 |      | 0.11 |      | 0.10 | 0.08 |      |      |      | 0.10 | 33   | 34            |      |      | 28   |      | 27   | 20   |      |      | 25   |     |    |    |    |
|  | Chromium (Hexavalent) |                               |      |      | 0.29 | 0.25 | 0.25 | 0.33 | 0.17 | 0.13 | 0.11 | 0.10 | 0.13 |               |      | 43   | 37   | 38   | 49   | 25   | 20   | 17   | 15   | 19  |    |    |    |
|  | para-Dichlorobenzene  |                               |      |      | 0.12 | 0.12 | 0.10 | 0.12 | 0.14 | 0.12 |      | 0.12 |      |               | 8    | 8    | 7    | 8    | 10   | 8    |      |      | 8    |     |    |    |    |
|  | Formaldehyde          | 2.27                          | 2.00 | 2.09 | 1.83 | 2.16 | 2.28 | 2.70 | 2.56 | 2.24 | 2.69 | 2.24 | 17   | 15            | 15   | 13   | 16   | 17   | 20   | 19   | 16   | 20   | 16   |     |    |    |    |
|  | Methylene Chloride    | 0.83                          | 6.65 | 0.66 | 0.58 | 0.80 | 0.69 | 0.55 | 0.75 |      |      | 0.50 | 3    | 23            | 2    | 2    | 3    | 2    | 2    | 3    |      |      | 2    |     |    |    |    |
|  | Perchloroethylene     | 0.16                          | 0.15 | 0.10 | 0.09 | 0.06 | 0.07 | 0.07 | 0.10 |      |      | 0.09 | 6    | 6             | 4    | 4    | 3    | 3    | 3    | 4    |      |      | 4    |     |    |    |    |
|  | Diesel PM             |                               |      |      |      |      |      |      |      |      |      |      |      |               |      |      |      |      |      |      |      |      |      |     |    |    |    |
| Total Health Risk                                  |                       |                               |      |      |      |      |      |      |      |      |      |      |      |               |      |      |      |      |      |      |      |      |      |     |    |    |    |

\* Concentrations for Chromium (Hexavalent) are expressed as ng/m<sup>3</sup>, and concentrations for Diesel PM are expressed as ug/m<sup>3</sup>. Concentrations for all other TACs are expressed as ppb.

\*\* Health Risk represents the number of excess cancer cases per million people based on a lifetime (70-year) exposure to the annual average concentration. Total Health Risk represents only those compounds listed in this table and only those with data for the year. There may be other significant compounds for which monitoring and/or health risk information are not available.

Table C-17 (continued)

## *San Francisco Bay Area Air Basin*

| COUNTY / SITE             | TAC                   | Annual Average Concentration* |      |      |      |       |      |      |      |      |      |       |       | Health Risk** |      |      |      |      |      |       |      |      |       |  |  |
|---------------------------|-----------------------|-------------------------------|------|------|------|-------|------|------|------|------|------|-------|-------|---------------|------|------|------|------|------|-------|------|------|-------|--|--|
|                           |                       | 1990                          | 1991 | 1992 | 1993 | 1994  | 1995 | 1996 | 1997 | 1998 | 1999 | 2000  | 1990  | 1991          | 1992 | 1993 | 1994 | 1995 | 1996 | 1997  | 1998 | 1999 | 2000  |  |  |
| BASIN SUMMARY             | Acetaldehyde          | 1.30                          | 1.40 | 1.03 | 1.31 | 1.17  | 0.42 | 0.83 | 0.73 | 0.65 | 0.76 | 0.68  | 6     | 7             | 5    | 6    | 2    | 4    | 4    | 3     | 4    | 3    |       |  |  |
|                           | Benzene               | 2.18                          | 1.82 | 1.49 | 1.49 | 1.40  | 1.26 | 0.71 | 0.61 | 0.71 | 0.60 | 0.56  | 202   | 169           | 138  | 138  | 129  | 116  | 66   | 56    | 66   | 55   | 52    |  |  |
|                           | 1,3-Butadiene         | 0.36                          | 0.29 | 0.28 | 0.37 | 0.29  | 0.28 | 0.22 | 0.19 | 0.22 | 0.17 | 0.15  | 135   | 108           | 103  | 138  | 108  | 104  | 82   | 70    | 82   | 64   | 56    |  |  |
|                           | Carbon Tetrachloride  | 0.13                          | 0.13 |      | 0.11 |       | 0.10 |      | 0.08 |      |      | 0.09  | 34    | 33            |      | 29   |      | 26   | 21   |       |      | 25   |       |  |  |
|                           | Chromium (Hexavalent) |                               |      | 0.23 | 0.20 | 0.19  | 0.25 | 0.13 | 0.12 | 0.10 | 0.10 | 0.12  |       |               | 34   | 29   | 29   | 37   | 19   | 17    | 15   | 15   | 18    |  |  |
|                           | para-Dichlorobenzene  |                               | 0.12 | 0.12 | 0.12 | 0.11  | 0.13 | 0.14 | 0.12 |      |      | 0.11  |       | 8             | 8    | 8    | 7    | 8    | 9    | 8     |      |      | 7     |  |  |
|                           | Formaldehyde          | 1.87                          | 1.73 | 1.43 | 1.56 | 1.66  | 2.06 | 2.62 | 1.85 | 1.76 | 2.09 | 1.77  | 14    | 13            | 11   | 11   | 12   | 15   | 19   | 14    | 13   | 15   | 13    |  |  |
|                           | Methylene Chloride    | 1.04                          | 2.32 | 0.65 | 0.72 | 0.59  | 0.60 | 0.58 | 0.55 |      |      | 0.53  | 4     | 8             | 2    | 2    | 2    | 2    | 2    | 2     |      |      | 2     |  |  |
|                           | Perchloroethylene     | 0.20                          | 0.23 | 0.17 | 0.13 | 0.08  | 0.09 | 0.07 | 0.07 |      |      | 0.08  | 8     | 9             | 7    | 5    | 3    | 4    | 3    | 3     |      |      | 3     |  |  |
|                           | Diesel PM***          | (2.5)                         |      |      |      | (1.9) |      |      |      |      |      | (1.6) | (750) |               |      |      |      |      |      | (570) |      |      | (480) |  |  |
| Average Basin Health Risk |                       |                               |      |      |      |       |      |      |      |      |      |       | 403   | 355           | 308  | 366  | 296  | 314  | 225  | 174   | 179  | 153  | 179   |  |  |

\* Concentrations for Chromium (Hexavalent) are expressed as ng/m<sup>3</sup>, and concentrations for Diesel PM are expressed as ug/m<sup>3</sup>. Concentrations for all other TACs are expressed as ppb.

\*\* Health Risk represents the number of excess cancer cases per million people based on a lifetime (70-year) exposure to the annual average concentration. Total Health Risk represents only those compounds listed in this table and only those with data for the year. There may be other significant compounds for which monitoring and/or health risk information are not available.

\*\*\* The Diesel PM concentrations are estimates based on receptor modeling. Because data are not available for all years, Diesel PM is not included in the Average Basin Health Risk number.

Table C-17 (continued)

## San Joaquin Valley Air Basin

| COUNTY / SITE                                | TAC                   | Annual Average Concentration* |      |      |      |                              |      |      |      |      |      |      |      | Health Risk** |      |      |      |      |      |      |      |      |      |     |
|--|-----------------------|-------------------------------|------|------|------|------------------------------|------|------|------|------|------|------|------|---------------|------|------|------|------|------|------|------|------|------|-----|
|  |                       | 1990                          | 1991 | 1992 | 1993 | 1994                         | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 1990 | 1991          | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 |     |
| KERN<br>Bakersfield-<br>Chester Avenue       | Acetaldehyde          | 1.87                          | 1.83 | 1.60 | 2.00 |                              |      |      |      |      |      |      | 9    | 9             | 8    | 10   |      |      |      |      |      |      |      |     |
|  | Benzene               | 2.68                          | 2.22 | 1.54 | 1.47 |                              |      |      |      |      |      |      | 248  | 205           | 143  | 136  |      |      |      |      |      |      |      |     |
|  | 1,3-Butadiene         | 0.39                          | 0.31 | 0.24 | 0.33 |                              |      |      |      |      |      |      | 146  | 115           | 90   | 123  |      |      |      |      |      |      |      |     |
|  | Carbon Tetrachloride  | 0.13                          | 0.13 |      | 0.10 |                              |      |      |      |      |      |      | 33   | 33            |      | 27   |      |      |      |      |      |      |      |     |
|  | Chromium (Hexavalent) |                               |      | 0.21 | 0.21 |                              |      |      |      |      |      |      |      |               | 31   | 31   |      |      |      |      |      |      |      |     |
|  | para-Dichlorobenzene  |                               |      | 0.12 | 0.17 |                              |      |      |      |      |      |      |      |               | 8    | 11   |      |      |      |      |      |      |      |     |
|  | Formaldehyde          | 2.44                          | 1.62 | 1.36 | 1.85 |                              |      |      |      |      |      |      | 18   | 12            | 10   | 14   |      |      |      |      |      |      |      |     |
|  | Methylene Chloride    | 0.92                          | 0.65 | 0.52 | 0.99 |                              |      |      |      |      |      |      | 3    | 2             | 2    | 3    |      |      |      |      |      |      |      |     |
|  | Perchloroethylene     | 0.09                          | 0.13 | 0.08 | 1.48 |                              |      |      |      |      |      |      | 4    | 5             | 3    | 59   |      |      |      |      |      |      |      |     |
|  | Diesel PM             |                               |      |      |      | No Monitoring Data Available |      |      |      |      |      |      |      |               |      |      |      |      |      |      |      |      |      |     |
| Total Health Risk                            |                       |                               |      |      |      |                              |      |      |      |      |      |      | 461  | 381           | 295  | 414  |      |      |      |      |      |      |      |     |
| KERN<br>Bakersfield-<br>5558 California Ave. | Acetaldehyde          |                               |      |      |      | 0.49                         | 1.59 | 1.22 | 1.27 | 1.69 | 1.19 |      |      |               |      |      |      | 2    | 8    | 6    | 6    | 8    | 6    |     |
|  | Benzene               |                               |      |      |      | 1.14                         | 0.78 | 0.57 | 0.70 | 0.71 | 0.58 |      |      |               |      |      |      | 106  | 72   | 53   | 65   | 66   | 54   |     |
|  | 1,3-Butadiene         |                               |      |      |      | 0.21                         | 0.21 | 0.16 | 0.20 | 0.15 | 0.13 |      |      |               |      |      |      | 78   | 79   | 60   | 75   | 58   | 47   |     |
|  | Carbon Tetrachloride  |                               |      |      |      | 0.10                         | 0.08 |      |      |      | 0.09 |      |      |               |      |      |      | 26   | 21   |      |      |      | 25   |     |
|  | Chromium (Hexavalent) |                               |      |      |      | 0.26                         | 0.13 | 0.10 | 0.10 | 0.10 | 0.10 |      |      |               |      |      |      | 39   | 19   | 15   | 15   | 16   | 16   |     |
|  | para-Dichlorobenzene  |                               |      |      |      | 0.11                         | 0.11 | 0.12 |      |      | 0.11 |      |      |               |      |      |      | 7    | 7    | 8    |      |      | 7    |     |
|  | Formaldehyde          |                               |      |      |      | 1.92                         | 3.48 | 3.12 | 2.99 | 3.67 | 2.79 |      |      |               |      |      |      | 14   | 26   | 23   | 22   | 27   | 21   |     |
|  | Methylene Chloride    |                               |      |      |      | 0.54                         | 0.64 | 0.50 |      |      | 0.50 |      |      |               |      |      |      | 2    | 2    | 2    |      |      | 2    |     |
|  | Perchloroethylene     |                               |      |      |      | 0.09                         | 0.12 | 0.04 |      |      | 0.07 |      |      |               |      |      |      | 4    | 5    | 2    |      |      | 3    |     |
|  | Diesel PM             |                               |      |      |      | No Monitoring Data Available |      |      |      |      |      |      |      |               |      |      |      |      |      |      |      |      |      |     |
| Total Health Risk                            |                       |                               |      |      |      |                              |      |      |      |      |      |      |      |               |      |      |      | 278  | 239  | 169  | 183  | 177  | 181  |     |
| FRESNO<br>Fresno-<br>1st Street              | Acetaldehyde          |                               | 2.29 | 1.89 | 1.40 | 0.67                         |      |      | 1.50 | 1.43 |      |      | 11   | 9             | 7    | 3    |      |      |      |      |      | 7    | 7    |     |
|  | Benzene               |                               | 2.42 | 1.34 | 1.35 | 1.44                         | 1.24 | 0.79 | 1.00 | 0.83 | 0.80 | 0.73 | 224  | 124           | 125  | 133  | 115  | 73   | 92   | 76   | 74   | 68   |      |     |
|  | 1,3-Butadiene         |                               | 0.46 | 0.26 | 0.34 | 0.36                         | 0.30 | 0.23 | 0.23 | 0.27 | 0.21 | 0.20 | 173  | 99            | 129  | 134  | 113  | 88   | 87   | 100  | 80   | 73   |      |     |
|  | Carbon Tetrachloride  |                               | 0.12 |      | 0.11 |                              | 0.10 | 0.08 |      |      | 0.10 |      | 32   |               | 28   |      |      | 26   | 21   |      |      |      | 25   |     |
|  | Chromium (Hexavalent) |                               |      | 0.21 | 0.15 | 0.14                         | 0.22 | 0.10 | 0.11 | 0.10 | 0.10 | 0.13 |      | 31            | 22   | 21   | 33   | 16   | 16   | 15   | 15   | 20   |      |     |
|  | para-Dichlorobenzene  |                               |      | 0.10 | 0.10 | 0.14                         | 0.13 | 0.11 | 0.14 |      | 0.10 |      |      | 7             | 7    | 9    | 8    | 7    | 9    |      |      | 7    |      |     |
|  | Formaldehyde          |                               | 2.32 |      | 1.64 | 2.01                         | 2.41 |      | 3.42 |      | 3.56 |      | 17   | 12            | 15   | 18   |      |      |      |      |      | 25   |      |     |
|  | Methylene Chloride    |                               | 0.62 | 0.54 | 0.69 | 0.59                         | 0.58 | 0.50 | 0.52 |      | 0.50 |      | 2    | 2             | 2    | 2    | 2    | 2    | 2    |      |      | 2    |      |     |
|  | Perchloroethylene     |                               | 0.14 | 0.10 | 0.10 | 0.06                         | 0.07 | 0.04 | 0.04 |      | 0.06 |      | 6    | 4             | 4    | 2    | 3    | 2    | 2    |      |      | 2    |      |     |
|  | Diesel PM             |                               |      |      |      | No Monitoring Data Available |      |      |      |      |      |      |      |               |      |      |      | 465  | 267  | 338  | 323  | 321  | 209  | 208 |
| Total Health Risk                            |                       |                               |      |      |      |                              |      |      |      |      |      |      |      |               |      |      |      | 223  | 169  | 230  |      |      |      |     |

\* Concentrations for Chromium (Hexavalent) are expressed as ng/m<sup>3</sup>, and concentrations for Diesel PM are expressed as ug/m<sup>3</sup>. Concentrations for all other TACs are expressed as ppb.

\*\* Health Risk represents the number of excess cancer cases per million people based on a lifetime (70-year) exposure to the annual average concentration. Total Health Risk represents only those compounds listed in this table and only those with data for the year. There may be other significant compounds for which monitoring and/or health risk information are not available.

## San Joaquin Valley Air Basin

| COUNTY / SITE                                      | TAC                          | Annual Average Concentration* |      |      |      |      |      |      |      |      |      |      |      | Health Risk** |      |      |      |      |      |      |      |      |      |     |
|--|------------------------------|-------------------------------|------|------|------|------|------|------|------|------|------|------|------|---------------|------|------|------|------|------|------|------|------|------|-----|
|  |                              | 1990                          | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 1990 | 1991          | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 |     |
| STANISLAUS<br>Modesto-<br>I Street<br>(Courthouse) | Acetaldehyde                 |                               | 1.51 | 1.37 | 1.75 | 1.44 | 0.51 | 1.17 | 1.25 |      |      |      |      |               |      |      |      |      |      | 7    | 7    | 8    | 7    | 2   |
|  | Benzene                      |                               |      |      |      |      |      |      |      |      |      |      |      |               |      |      |      |      |      | 6    | 6    |      |      |     |
|  | 1,3-Butadiene                |                               |      |      |      |      |      |      |      |      |      |      |      |               |      |      |      |      |      |      |      |      |      |     |
|  | Carbon Tetrachloride         |                               |      |      |      |      |      |      |      |      |      |      |      |               |      |      |      |      |      |      |      |      |      |     |
|  | Chromium (Hexavalent)        |                               |      | 0.27 | 0.23 | 0.22 | 0.32 | 0.16 | 0.11 |      |      |      |      |               |      |      |      |      |      | 40   | 34   | 33   | 48   | 25  |
|  | para-Dichlorobenzene         |                               |      |      |      |      |      |      |      |      |      |      |      |               |      |      |      |      |      | 17   |      |      |      |     |
|  | Formaldehyde                 |                               |      | 1.43 | 1.32 | 1.82 | 1.86 | 2.16 | 2.58 | 2.43 |      |      |      |               |      |      |      |      |      | 11   | 10   | 13   | 14   | 16  |
|  | Methylene Chloride           |                               |      |      |      |      |      |      |      |      |      |      |      |               |      |      |      |      |      | 19   | 18   |      |      |     |
|  | Perchloroethylene            |                               |      |      |      |      |      |      |      |      |      |      |      |               |      |      |      |      |      |      |      |      |      |     |
|  | Diesel PM                    |                               |      |      |      |      |      |      |      |      |      |      |      |               |      |      |      |      |      |      |      |      |      |     |
| Total Health Risk                                  | No Monitoring Data Available |                               |      |      |      |      |      |      |      |      |      |      |      |               |      |      |      |      |      |      |      |      |      |     |
|  |                              |                               |      |      |      |      |      |      |      |      |      |      |      |               |      |      |      |      |      | 18   | 57   | 55   | 54   | 66  |
| STANISLAUS<br>Modesto-<br>14th Street              | Acetaldehyde                 |                               |      |      |      |      |      |      |      |      |      |      |      |               |      |      |      |      |      | 50   | 41   |      |      |     |
|  | Benzene                      | 2.25                          | 1.86 | 1.20 | 1.23 | 1.14 | 1.20 | 0.70 | 0.77 | 0.85 | 0.61 |      |      |               |      |      |      |      |      | 78   | 56   |      |      |     |
|  | 1,3-Butadiene                | 0.38                          | 0.35 | 0.22 | 0.35 | 0.29 | 0.30 | 0.24 | 0.21 | 0.26 | 0.16 |      |      |               |      |      |      |      |      | 71   | 78   | 98   | 89   | 61  |
|  | Carbon Tetrachloride         | 0.13                          | 0.13 |      | 0.11 |      | 0.09 | 0.07 |      | 0.11 |      |      |      |               |      |      |      |      | 34   | 35   | 30   | 25   | 20   | 30  |
|  | Chromium (Hexavalent)        |                               |      | 0.11 | 0.10 | 0.12 | 0.10 | 0.11 | 0.10 | 0.15 |      |      |      |               |      |      |      |      | 7    | 7    | 8    | 7    | 7    | 10  |
|  | para-Dichlorobenzene         |                               |      |      |      |      |      |      |      |      |      |      |      |               |      |      |      |      |      |      |      |      |      | 15  |
|  | Formaldehyde                 |                               |      |      |      |      |      |      |      |      |      |      |      |               |      |      |      |      |      |      |      |      |      | 23  |
|  | Methylene Chloride           | 0.65                          | 0.61 | 0.55 | 0.65 | 0.62 | 0.58 | 0.50 | 0.59 | 0.51 |      |      |      |               |      |      |      |      | 2    | 2    | 2    | 2    | 2    | 2   |
|  | Perchloroethylene            | 0.15                          | 0.15 | 0.12 | 0.11 | 0.09 | 0.05 | 0.04 | 0.05 | 0.04 |      |      |      |               |      |      |      |      | 6    | 6    | 5    | 4    | 3    | 2   |
|  | Diesel PM                    |                               |      |      |      |      |      |      |      |      |      |      |      |               |      |      |      |      |      |      |      |      |      | 1   |
| Total Health Risk                                  | No Monitoring Data Available |                               |      |      |      |      |      |      |      |      |      |      |      |               |      |      |      |      |      | 392  | 355  | 209  | 289  | 227 |
|  |                              |                               |      |      |      |      |      |      |      |      |      |      |      |               |      |      |      |      | 7    | 9    | 5    | 6    | 5    | 4   |
| SAN JOAQUIN<br>Stockton-<br>Hazelton Street        | Acetaldehyde                 | 1.47                          | 1.75 | 1.07 | 1.31 | 1.10 |      | 0.90 | 0.90 | 1.00 | 1.07 | 0.64 |      |               |      |      |      |      | 5    | 5    | 4    | 4    | 5    | 3   |
|  | Benzene                      | 2.01                          | 1.95 | 1.37 |      | 1.23 | 1.05 | 0.64 | 0.52 | 0.69 | 0.65 | 0.58 |      |               |      |      |      |      | 186  | 181  | 127  | 113  | 97   | 60  |
|  | 1,3-Butadiene                | 0.34                          | 0.32 | 0.22 |      | 0.28 | 0.25 | 0.21 | 0.18 | 0.21 | 0.18 | 0.16 |      |               |      |      |      |      | 126  | 121  | 82   | 106  | 94   | 77  |
|  | Carbon Tetrachloride         | 0.13                          | 0.14 |      |      | 0.10 | 0.08 |      | 0.12 |      | 0.10 | 0.12 |      |               |      |      |      |      | 35   | 36   |      | 26   | 20   | 30  |
|  | Chromium (Hexavalent)        |                               |      | 0.22 | 0.25 | 0.25 |      | 0.14 |      | 0.10 | 0.12 |      |      |               |      |      |      |      | 33   | 37   | 37   | 21   |      | 15  |
|  | para-Dichlorobenzene         |                               |      | 0.10 | 0.10 |      | 0.10 | 0.11 | 0.10 | 0.11 |      | 0.11 |      |               |      |      |      |      | 7    | 7    | 7    | 7    | 7    | 7   |
|  | Formaldehyde                 | 1.81                          | 1.88 | 1.24 | 1.38 | 1.56 |      | 2.35 | 2.24 | 2.33 | 2.68 | 1.61 |      |               |      |      |      |      | 13   | 14   | 9    | 10   | 12   | 17  |
|  | Methylene Chloride           | 0.63                          | 0.50 | 0.60 |      | 0.50 | 0.75 | 0.53 | 0.50 | 0.50 | 0.50 | 0.53 |      |               |      |      |      |      | 2    | 2    | 2    | 3    | 2    | 2   |
|  | Perchloroethylene            | 0.13                          | 0.11 | 0.12 |      | 0.07 | 0.06 | 0.07 | 0.09 | 0.03 |      | 0.11 |      |               |      |      |      |      | 5    | 5    | 5    | 3    | 4    | 1   |
|  | Diesel PM                    |                               |      |      |      |      |      |      |      |      |      |      |      |               |      |      |      |      |      |      |      |      |      | 4   |
| Total Health Risk                                  | No Monitoring Data Available |                               |      |      |      |      |      |      |      |      |      |      |      |               |      |      |      |      | 374  | 375  | 270  | 53   | 285  | 229 |
|  |                              |                               |      |      |      |      |      |      |      |      |      |      |      |               |      |      |      |      | 711  | 149  | 196  | 170  | 184  |     |

\* Concentrations for Chromium (Hexavalent) are expressed as ng/m<sup>3</sup>, and concentrations for Diesel PM are expressed as ug/m<sup>3</sup>. Concentrations for all other TACs are expressed as ppb.

\*\* Health Risk represents the number of excess cancer cases per million people based on a lifetime (70-year) exposure to the annual average concentration. Total Health Risk represents only those compounds listed in this table and only those with data for the year. There may be other significant compounds for which monitoring and/or health risk information are not available.

Table C-18 (continued)

## San Joaquin Valley Air Basin

| COUNTY / SITE             | TAC                   | Annual Average Concentration* |      |      |      |       |      |      |      |      |      |       |       | Health Risk** |      |      |      |      |      |      |      |      |      |     |  |
|---------------------------|-----------------------|-------------------------------|------|------|------|-------|------|------|------|------|------|-------|-------|---------------|------|------|------|------|------|------|------|------|------|-----|--|
|                           |                       | 1990                          | 1991 | 1992 | 1993 | 1994  | 1995 | 1996 | 1997 | 1998 | 1999 | 2000  | 1990  | 1991          | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 |     |  |
| BASIN SUMMARY             | Acetaldehyde          | 1.94                          | 1.84 | 1.38 | 1.73 | 1.29  | 0.54 | 1.28 | 1.19 | 1.30 | 1.56 | 1.09  | 9     | 9             | 7    | 8    | 6    | 3    | 6    | 6    | 6    | 8    | 5    |     |  |
|                           | Benzene               | 2.45                          | 2.11 | 1.36 | 1.32 | 1.33  | 1.16 | 0.73 | 0.71 | 0.76 | 0.69 | 0.63  | 227   | 196           | 126  | 122  | 123  | 107  | 68   | 66   | 71   | 64   | 58   |     |  |
|                           | 1,3-Butadiene         | 0.41                          | 0.36 | 0.24 | 0.34 | 0.32  | 0.26 | 0.22 | 0.20 | 0.23 | 0.18 | 0.16  | 154   | 135           | 89   | 127  | 121  | 99   | 83   | 73   | 88   | 67   | 59   |     |  |
|                           | Carbon Tetrachloride  | 0.13                          | 0.13 | 0.11 |      | 0.10  | 0.08 |      | 0.11 |      | 0.10 | 0.10  | 34    | 34            |      | 29   |      | 26   | 20   |      | 30   |      | 25   |     |  |
|                           | Chromium (Hexavalent) |                               |      | 0.23 | 0.21 | 0.19  | 0.28 | 0.13 | 0.11 | 0.10 | 0.10 | 0.12  |       |               | 34   | 31   | 29   | 42   | 20   | 16   | 15   | 15   | 18   |     |  |
|                           | para-Dichlorobenzene  |                               |      | 0.11 | 0.11 | 0.13  | 0.11 | 0.11 | 0.10 | 0.13 |      | 0.11  |       | 7             | 7    | 9    | 7    | 8    | 7    | 9    |      |      | 7    |     |  |
|                           | Formaldehyde          | 2.45                          | 1.81 | 1.46 | 1.67 | 1.80  | 2.10 | 2.96 | 2.77 | 2.86 | 3.44 | 2.61  | 18    | 13            | 11   | 12   | 13   | 15   | 22   | 20   | 21   | 25   | 19   |     |  |
|                           | Methylene Chloride    | 0.76                          | 0.59 | 0.55 | 0.76 | 0.59  | 0.61 | 0.54 | 0.53 | 0.52 | 0.50 | 0.53  | 3     | 2             | 2    | 3    | 2    | 2    | 2    | 2    | 2    | 2    | 2    |     |  |
|                           | Perchloroethylene     | 0.13                          | 0.13 | 0.10 | 0.47 | 0.07  | 0.07 | 0.07 | 0.06 | 0.04 |      | 0.08  | 5     | 5             | 4    | 19   | 3    | 3    | 3    | 2    | 2    |      | 3    |     |  |
|                           | Diesel PM***          | (2.6)                         |      |      |      | (1.7) |      |      |      |      |      | (1.3) | (780) | 450           | 401  | 280  | 360  | 304  | 305  | 231  | 194  | 235  | 181  | 196 |  |
| Average Basin Health Risk |                       |                               |      |      |      |       |      |      |      |      |      |       |       |               |      |      |      |      |      |      |      |      |      |     |  |

\* Concentrations for Chromium (Hexavalent) are expressed as ng/m<sup>3</sup>, and concentrations for Diesel PM are expressed as ug/m<sup>3</sup>. Concentrations for all other TACs are expressed as ppb.

\*\* Health Risk represents the number of excess cancer cases per million people based on a lifetime (70-year) exposure to the annual average concentration. Total Health Risk represents only those compounds listed in this table and only those with data for the year. There may be other significant compounds for which monitoring and/or health risk information are not available.

\*\*\* The Diesel PM concentrations are estimates based on receptor modeling. Because data are not available for all years, Diesel PM is not included in the Average Basin Health Risk number.

Table C-18 (continued)

## San Diego Air Basin

| COUNTY / SITE                            | TAC                   | Annual Average Concentration* |      |      |      |       |      |      |      |      |      |       |       | Health Risk** |      |      |      |      |      |      |      |      |      |     |
|--|-----------------------|-------------------------------|------|------|------|-------|------|------|------|------|------|-------|-------|---------------|------|------|------|------|------|------|------|------|------|-----|
|  |                       | 1990                          | 1991 | 1992 | 1993 | 1994  | 1995 | 1996 | 1997 | 1998 | 1999 | 2000  | 1990  | 1991          | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 |     |
| SAN DIEGO<br>Chula Vista                 | Acetaldehyde          | 1.10                          | 1.21 | 0.99 | 1.16 | 1.32  | 0.64 | 0.83 | 0.91 | 0.70 | 0.91 | 0.75  | 5     | 6             | 5    | 6    | 6    | 3    | 4    | 4    | 3    | 4    | 4    |     |
|  | Benzene               | 2.00                          | 1.21 | 1.03 | 0.80 | 1.08  | 0.81 |      | 0.63 | 0.61 |      | 0.55  | 186   | 112           | 95   | 74   | 100  | 75   |      | 58   | 56   |      | 51   |     |
|  | 1,3-Butadiene         | 0.28                          | 0.18 | 0.18 | 0.23 | 0.26  | 0.21 |      | 0.16 | 0.15 |      | 0.14  | 105   | 69            | 69   | 85   | 98   | 77   |      | 61   | 57   |      | 51   |     |
|  | Carbon Tetrachloride  | 0.13                          | 0.13 |      | 0.10 |       | 0.10 |      |      |      |      | 0.09  | 35    | 34            |      | 27   |      | 26   |      |      |      |      | 25   |     |
|  | Chromium (Hexavalent) |                               |      | 0.24 | 0.20 | 0.17  | 0.20 | 0.11 | 0.10 | 0.10 | 0.11 | 0.10  |       |               | 37   | 30   | 25   | 29   | 16   | 15   | 15   | 16   | 16   |     |
|  | para-Dichlorobenzene  |                               |      | 0.10 | 0.11 | 0.13  | 0.12 | 0.11 |      | 0.13 |      |       |       | 7             | 7    | 8    | 8    | 7    |      | 8    |      |      |      |     |
|  | Formaldehyde          | 1.26                          | 1.30 | 1.10 | 1.46 | 2.08  | 1.81 | 2.10 | 2.37 | 2.00 | 2.49 | 2.14  | 9     | 10            | 8    | 11   | 15   | 13   | 15   | 17   | 15   | 18   | 16   |     |
|  | Methylene Chloride    | 0.58                          | 0.59 | 0.81 | 1.01 | 0.57  | 0.57 |      | 0.62 |      |      | 0.65  | 2     | 2             | 3    | 3    | 2    | 2    | 2    | 2    |      | 2    | 2    |     |
|  | Perchloroethylene     | 0.24                          | 0.23 | 0.21 | 0.14 | 0.13  | 0.15 |      | 0.10 |      |      | 0.08  | 9     | 9             | 8    | 6    | 5    | 6    |      | 4    |      |      | 3    |     |
|  | Diesel PM             |                               |      |      |      |       |      |      |      |      |      |       |       |               |      |      |      |      |      |      |      |      |      |     |
| Total Health Risk                        |                       | No Monitoring Data Available  |      |      |      |       |      |      |      |      |      |       |       | 351           | 249  | 232  | 250  | 259  | 238  | 35   | 169  | 146  | 38   | 168 |
| SAN DIEGO<br>El Cajon-<br>Redwood Avenue | Acetaldehyde          | 1.56                          | 1.78 | 1.46 | 1.66 |       |      | 1.23 |      |      |      | 1.17  | 0.92  | 8             | 9    | 7    | 8    |      |      | 6    |      | 4    |      |     |
|  | Benzene               | 2.50                          | 2.20 | 1.94 | 1.51 |       | 1.14 | 0.86 | 0.89 | 0.91 | 0.98 | 0.74  | 231   | 203           | 179  | 140  |      | 106  | 79   | 82   | 84   | 91   | 69   |     |
|  | 1,3-Butadiene         | 0.39                          | 0.33 | 0.33 | 0.40 |       | 0.28 | 0.25 | 0.24 | 0.24 | 0.24 | 0.18  | 145   | 125           | 125  | 150  |      | 105  | 95   | 88   | 90   | 90   | 68   |     |
|  | Carbon Tetrachloride  | 0.13                          | 0.13 |      |      | 0.10  | 0.08 |      |      |      |      | 0.10  | 35    | 33            |      |      | 27   | 21   |      |      |      | 25   |      |     |
|  | Chromium (Hexavalent) |                               |      | 0.24 | 0.18 |       |      | 0.10 | 0.11 |      | 0.10 | 0.10  |       |               | 36   | 26   |      |      | 16   | 17   |      | 15   | 15   |     |
|  | para-Dichlorobenzene  |                               |      | 0.12 | 0.13 |       | 0.12 | 0.11 | 0.13 |      |      |       |       |               | 8    | 8    |      | 8    | 7    | 8    |      |      |      |     |
|  | Formaldehyde          | 2.01                          | 1.76 | 1.42 | 2.06 |       |      | 3.14 |      |      | 2.84 | 2.32  | 15    | 13            | 10   | 15   |      |      | 23   |      |      | 21   | 17   |     |
|  | Methylene Chloride    | 0.59                          | 1.07 | 1.87 | 1.25 |       | 0.70 | 0.61 | 0.52 |      | 0.52 | 0.87  | 2     | 4             | 7    | 4    |      | 2    | 2    | 2    |      | 2    | 3    |     |
|  | Perchloroethylene     | 0.33                          | 0.31 | 0.32 | 0.26 |       | 0.35 | 0.17 | 0.15 |      |      | 0.10  | 13    | 12            | 13   | 10   |      | 14   | 7    | 6    |      |      | 4    |     |
|  | Diesel PM             |                               |      |      |      |       |      |      |      |      |      |       |       |               |      |      |      |      |      |      |      |      |      |     |
| Total Health Risk                        |                       | No Monitoring Data Available  |      |      |      |       |      |      |      |      |      |       |       | 449           | 399  | 385  | 361  | 262  | 256  | 203  | 174  | 225  | 205  |     |
| BASIN SUMMARY                            | Acetaldehyde          | 1.33                          | 1.50 | 1.22 | 1.41 | 1.48  | 0.64 | 1.03 | 1.00 | 0.86 | 1.04 | 0.84  | 6     | 7             | 6    | 7    | 3    | 5    | 5    | 4    | 5    | 4    |      |     |
|  | Benzene               | 2.25                          | 1.70 | 1.48 | 1.16 | 1.39  | 0.98 | 0.76 | 0.76 | 0.76 | 0.86 | 0.65  | 208   | 158           | 137  | 107  | 129  | 90   | 71   | 70   | 70   | 79   | 60   |     |
|  | 1,3-Butadiene         | 0.33                          | 0.26 | 0.26 | 0.31 | 0.31  | 0.24 | 0.21 | 0.20 | 0.20 | 0.22 | 0.16  | 125   | 97            | 97   | 117  | 115  | 91   | 78   | 75   | 74   | 83   | 60   |     |
|  | Carbon Tetrachloride  | 0.13                          | 0.13 |      | 0.10 |       | 0.10 | 0.08 |      |      |      | 0.09  | 35    | 34            |      | 27   |      | 26   | 20   |      |      | 25   |      |     |
|  | Chromium (Hexavalent) |                               |      |      | 0.24 | 0.19  | 0.16 | 0.18 | 0.11 | 0.11 | 0.10 | 0.10  |       |               | 36   | 28   | 23   | 27   | 16   | 15   | 15   | 15   | 15   |     |
|  | para-Dichlorobenzene  |                               |      |      | 0.10 | 0.11  | 0.13 | 0.15 | 0.12 | 0.11 | 0.13 |       |       |               | 7    | 8    | 8    | 10   | 8    | 7    | 8    |      |      |     |
|  | Formaldehyde          | 1.64                          | 1.53 | 1.26 | 1.76 | 2.25  | 2.13 | 2.62 | 2.62 | 2.27 | 2.67 | 2.23  | 12    | 11            | 9    | 13   | 17   | 16   | 19   | 19   | 17   | 20   | 16   |     |
|  | Methylene Chloride    | 0.59                          | 0.83 | 1.34 | 1.13 | 0.73  | 0.63 | 0.59 | 0.57 |      | 0.53 | 0.76  | 2     | 3             | 5    | 4    | 3    | 2    | 2    | 2    |      | 2    | 3    |     |
|  | Perchloroethylene     | 0.28                          | 0.27 | 0.26 | 0.20 | 0.21  | 0.25 | 0.15 | 0.13 |      |      | 0.09  | 11    | 11            | 11   | 8    | 8    | 10   | 6    | 5    |      | 4    |      |     |
|  | Diesel PM***          | (2.9)                         |      |      |      | (1.9) |      |      |      |      |      | (1.4) | (870) |               | 399  | 328  | 309  | 319  | 312  | 273  | 224  | 200  | 180  | 204 |
| Average Basin Health Risk                |                       |                               |      |      |      |       |      |      |      |      |      |       |       |               |      |      |      |      |      |      |      |      |      |     |

\* Concentrations for Chromium (Hexavalent) are expressed as ng/m<sup>3</sup>, and concentrations for Diesel PM are expressed as ug/m<sup>3</sup>. Concentrations for all other TACs are expressed as ppb.

\*\* Health Risk represents the number of excess cancer cases per million people based on a lifetime (70-year) exposure to the annual average concentration. Total Health Risk represents only those compounds listed in this table and only those with data for the year. There may be other significant compounds for which monitoring and/or health risk information are not available.

\*\*\* The Diesel PM concentrations are estimates based on receptor modeling. Because data are not available for all years, Diesel PM is not included in the Average Basin Health Risk number.

Table C-19

## Sacramento Valley Air Basin

| COUNTY / SITE                               | TAC                   | Annual Average Concentration* |      |      |                              |      |      |      |      |      |      |      |      | Health Risk** |      |      |      |      |      |      |      |      |      |     |     |     |     |
|---|-----------------------|-------------------------------|------|------|------------------------------|------|------|------|------|------|------|------|------|---------------|------|------|------|------|------|------|------|------|------|-----|-----|-----|-----|
|   |                       | 1990                          | 1991 | 1992 | 1993                         | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 1990 | 1991          | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 |     |     |     |     |
| BUTTE<br>Chico-<br>Manzanita                | Acetaldehyde          |                               |      |      | 1.55                         | 1.11 | 0.54 | 1.15 | 1.17 | 0.96 | 1.41 | 0.89 |      |               |      | 8    | 5    | 3    | 6    | 6    | 5    | 7    | 4    |     |     |     |     |
|   | Benzene               |                               |      |      | 1.10                         | 1.14 | 0.85 | 0.67 |      | 0.55 | 0.64 | 0.52 |      |               |      | 102  | 106  | 78   | 62   |      | 51   | 59   | 48   |     |     |     |     |
|   | 1,3-Butadiene         |                               |      |      | 0.30                         | 0.25 | 0.21 | 0.22 |      | 0.17 | 0.15 | 0.14 |      |               |      | 111  | 94   | 77   | 81   |      | 64   | 56   | 54   |     |     |     |     |
|   | Carbon Tetrachloride  |                               |      |      | 0.11                         |      | 0.10 | 0.08 |      |      |      |      |      |               |      | 29   |      | 26   | 21   |      |      |      |      |     |     |     |     |
|   | Chromium (Hexavalent) |                               |      |      | 0.15                         | 0.13 | 0.16 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 |      |               |      | 23   | 19   | 24   | 16   | 15   | 15   | 15   | 15   |     |     |     |     |
|   | para-Dichlorobenzene  |                               |      |      | 0.10                         | 0.13 | 0.10 | 0.12 |      |      |      |      |      |               |      | 7    | 8    | 7    | 8    |      |      |      |      |     |     |     |     |
|   | Formaldehyde          |                               |      |      | 2.08                         | 1.78 | 2.04 | 2.99 | 3.42 | 2.63 | 4.15 | 2.76 |      |               |      | 15   | 13   | 15   | 22   | 25   | 19   | 31   | 20   |     |     |     |     |
|   | Methylene Chloride    |                               |      |      | 0.81                         | 0.50 | 0.53 | 0.58 |      |      |      |      |      |               |      | 3    | 2    | 2    | 2    |      |      |      |      |     |     |     |     |
|   | Perchloroethylene     |                               |      |      | 0.06                         | 0.27 | 0.05 | 0.05 |      |      |      |      |      |               |      | 2    | 11   | 2    | 2    |      |      |      |      |     |     |     |     |
|   | Diesel PM             |                               |      |      | No Monitoring Data Available |      |      |      |      |      |      |      |      |               |      |      |      |      |      |      |      |      |      |     |     |     |     |
| Total Health Risk                           |                       |                               |      |      |                              |      |      |      |      |      |      |      |      |               |      |      |      |      |      | 300  | 258  | 234  | 220  | 46  | 154 | 168 | 141 |
| BUTTE<br>Chico-<br>Salem Street             | Acetaldehyde          | 1.27                          |      |      |                              |      |      |      |      |      |      |      |      |               |      | 6    |      |      |      |      |      |      |      |     |     |     |     |
|   | Benzene               | 1.96                          | 1.91 |      |                              |      |      |      |      |      |      |      |      |               |      | 182  | 177  |      |      |      |      |      |      |     |     |     |     |
|   | 1,3-Butadiene         | 0.40                          | 0.36 |      |                              |      |      |      |      |      |      |      |      |               |      | 151  | 136  |      |      |      |      |      |      |     |     |     |     |
|   | Carbon Tetrachloride  | 0.12                          | 0.12 |      |                              |      |      |      |      |      |      |      |      |               |      | 32   | 33   |      |      |      |      |      |      |     |     |     |     |
|   | Chromium (Hexavalent) |                               |      |      |                              |      |      |      |      |      |      |      |      |               |      |      |      |      |      |      |      |      |      |     |     |     |     |
|   | para-Dichlorobenzene  |                               |      |      |                              |      |      |      |      |      |      |      |      |               |      |      |      |      |      |      |      |      |      |     |     |     |     |
|   | Formaldehyde          | 1.49                          |      |      |                              |      |      |      |      |      |      |      |      |               |      | 11   |      |      |      |      |      |      |      |     |     |     |     |
|   | Methylene Chloride    | 0.53                          | 0.57 |      |                              |      |      |      |      |      |      |      |      |               |      | 2    | 2    |      |      |      |      |      |      |     |     |     |     |
|   | Perchloroethylene     | 0.05                          | 0.05 |      |                              |      |      |      |      |      |      |      |      |               |      | 2    | 2    |      |      |      |      |      |      |     |     |     |     |
|   | Diesel PM             |                               |      |      | No Monitoring Data Available |      |      |      |      |      |      |      |      |               |      |      |      |      |      |      |      |      |      |     |     |     |     |
| Total Health Risk                           |                       |                               |      |      |                              |      |      |      |      |      |      |      |      |               |      | 386  | 350  |      |      |      |      |      |      |     |     |     |     |
| PLACER<br>Roseville-<br>North Sunrise Blvd. | Acetaldehyde          |                               |      |      | 0.96                         | 0.25 | 0.90 | 0.93 | 0.88 |      | 0.77 |      |      |               |      |      | 5    | 1    | 4    | 4    | 4    |      |      |     | 4   |     |     |
|   | Benzene               |                               |      |      | 0.91                         | 0.75 | 0.44 | 0.46 | 0.45 | 0.48 | 0.39 |      |      |               |      | 84   | 70   | 40   | 42   | 42   | 44   | 36   |      |     |     |     |     |
|   | 1,3-Butadiene         |                               |      |      | 0.19                         | 0.17 | 0.14 | 0.12 | 0.14 | 0.11 | 0.10 |      |      |               |      | 73   | 63   | 51   | 46   | 52   | 40   | 36   |      |     |     |     |     |
|   | Carbon Tetrachloride  |                               |      |      |                              | 0.10 | 0.08 |      |      |      |      |      |      |               |      |      | 26   | 20   |      |      |      |      |      |     | 25  |     |     |
|   | Chromium (Hexavalent) |                               |      |      | 0.13                         | 0.19 | 0.11 | 0.10 | 0.10 | 0.10 | 0.10 |      |      |               |      | 19   | 29   | 16   | 15   | 15   | 15   | 15   |      |     |     |     |     |
|   | para-Dichlorobenzene  |                               |      |      | 0.28                         | 0.17 | 0.10 | 0.15 |      |      |      |      |      |               |      | 19   | 11   | 7    | 10   |      |      |      |      | 7   |     |     |     |
|   | Formaldehyde          |                               |      |      | 1.71                         | 1.78 | 2.52 | 2.42 | 2.42 |      | 2.25 |      |      |               |      | 13   | 13   | 19   | 18   | 18   |      |      |      | 17  |     |     |     |
|   | Methylene Chloride    |                               |      |      | 0.82                         | 0.54 | 0.50 | 0.50 |      |      |      |      |      |               |      | 3    | 2    | 2    | 2    |      |      |      |      | 2   |     |     |     |
|   | Perchloroethylene     |                               |      |      | 0.07                         | 0.05 | 0.06 | 0.06 |      |      |      |      |      |               |      | 3    | 2    | 2    | 3    |      |      |      |      | 2   |     |     |     |
|   | Diesel PM             |                               |      |      | No Monitoring Data Available |      |      |      |      |      |      |      |      |               |      |      |      |      |      |      | 219  | 217  | 161  | 140 | 131 | 99  | 144 |
| Total Health Risk                           |                       |                               |      |      |                              |      |      |      |      |      |      |      |      |               |      |      |      |      |      |      |      |      |      |     |     |     |     |

\* Concentrations for Chromium (Hexavalent) are expressed as ng/m<sup>3</sup>, and concentrations for Diesel PM are expressed as ug/m<sup>3</sup>. Concentrations for all other TACs are expressed as ppb.

\*\* Health Risk represents the number of excess cancer cases per million people based on a lifetime (70-year) exposure to the annual average concentration. Total Health Risk represents only those compounds listed in this table and only those with data for the year. There may be other significant compounds for which monitoring and/or health risk information are not available.

## Sacramento Valley Air Basin

| COUNTY / SITE                                  | TAC                   | Annual Average Concentration* |      |      |      |       |      |      |      |      |      |       |       | Health Risk** |      |      |      |      |      |       |      |      |       |  |
|--|-----------------------|-------------------------------|------|------|------|-------|------|------|------|------|------|-------|-------|---------------|------|------|------|------|------|-------|------|------|-------|--|
|  |                       | 1990                          | 1991 | 1992 | 1993 | 1994  | 1995 | 1996 | 1997 | 1998 | 1999 | 2000  | 1990  | 1991          | 1992 | 1993 | 1994 | 1995 | 1996 | 1997  | 1998 | 1999 | 2000  |  |
| SACRAMENTO<br>Citrus Heights-<br>Sunrise Blvd. | Acetaldehyde          | 1.32                          |      |      |      |       |      |      |      |      |      |       | 6     |               |      |      |      |      |      |       |      |      |       |  |
|  | Benzene               | 2.08                          | 1.85 | 1.41 |      |       |      |      |      |      |      |       | 192   | 171           | 130  |      |      |      |      |       |      |      |       |  |
|  | 1,3-Butadiene         | 0.35                          | 0.30 | 0.31 |      |       |      |      |      |      |      |       | 133   | 114           | 115  |      |      |      |      |       |      |      |       |  |
|  | Carbon Tetrachloride  | 0.12                          | 0.12 |      |      |       |      |      |      |      |      |       | 33    | 32            |      |      |      |      |      |       |      |      |       |  |
|  | Chromium (Hexavalent) |                               |      |      |      |       |      |      |      |      |      |       |       |               |      |      |      |      |      |       |      |      |       |  |
|  | para-Dichlorobenzene  |                               |      | 0.11 |      |       |      |      |      |      |      |       |       |               |      |      |      |      |      |       |      |      |       |  |
|  | Formaldehyde          | 1.66                          |      |      |      |       |      |      |      |      |      |       | 12    |               |      |      |      |      |      |       |      |      |       |  |
|  | Methylene Chloride    | 0.76                          | 0.54 | 0.50 |      |       |      |      |      |      |      |       | 3     | 2             | 2    |      |      |      |      |       |      |      |       |  |
|  | Perchloroethylene     | 0.10                          | 0.09 | 0.08 |      |       |      |      |      |      |      |       | 4     | 4             | 3    |      |      |      |      |       |      |      |       |  |
|  | Diesel PM             |                               |      |      |      |       |      |      |      |      |      |       |       |               |      |      |      |      |      |       |      |      |       |  |
| <b>Total Health Risk</b>                       |                       | No Monitoring Data Available  |      |      |      |       |      |      |      |      |      |       |       | 383           | 323  | 257  |      |      |      |       |      |      |       |  |
| BASIN SUMMARY                                  | Acetaldehyde          | 1.29                          |      |      | 1.37 | 1.04  | 0.39 | 1.03 | 1.05 | 0.92 | 1.23 | 0.83  | 6     |               |      | 7    | 5    | 2    | 5    | 5     | 5    | 6    | 4     |  |
|  | Benzene               | 2.02                          | 1.88 | 1.35 | 1.00 | 1.02  | 0.80 | 0.56 | 0.55 | 0.50 | 0.56 | 0.45  | 187   | 174           | 125  | 92   | 95   | 74   | 51   | 51    | 47   | 52   | 42    |  |
|  | 1,3-Butadiene         | 0.38                          | 0.33 | 0.28 | 0.29 | 0.22  | 0.19 | 0.18 | 0.16 | 0.15 | 0.13 | 0.12  | 142   | 125           | 106  | 108  | 83   | 70   | 66   | 60    | 58   | 48   | 45    |  |
|  | Carbon Tetrachloride  | 0.12                          | 0.12 |      | 0.11 |       | 0.10 | 0.08 |      |      |      |       | 0.09  | 33            | 32   |      | 29   |      | 26   | 21    |      |      | 25    |  |
|  | Chromium (Hexavalent) |                               |      | 0.17 | 0.14 | 0.13  | 0.18 | 0.11 | 0.10 | 0.10 | 0.10 | 0.10  |       |               |      | 26   | 21   | 19   | 26   | 16    | 15   | 15   | 15    |  |
|  | para-Dichlorobenzene  |                               |      | 0.11 | 0.10 | 0.20  | 0.14 | 0.11 | 0.14 |      |      |       | 0.10  |               |      | 7    | 7    | 14   | 9    | 7     | 10   |      | 7     |  |
|  | Formaldehyde          | 1.57                          |      |      | 1.77 | 1.75  | 1.91 | 2.76 | 2.92 | 2.52 | 3.61 | 2.51  | 12    |               |      | 13   | 13   | 14   | 20   | 22    | 19   | 27   | 18    |  |
|  | Methylene Chloride    | 0.65                          | 0.56 | 0.55 | 0.98 | 0.66  | 0.53 | 0.54 | 0.52 |      | 0.60 | 0.57  | 2     | 2             | 2    | 3    | 2    | 2    | 2    | 2     | 2    | 2    | 2     |  |
|  | Perchloroethylene     | 0.07                          | 0.07 | 0.06 | 0.05 | 0.17  | 0.05 | 0.06 | 0.05 |      |      | 0.06  | 3     | 3             | 3    | 2    | 7    | 2    | 2    | 2     | 2    |      | 2     |  |
|  | Diesel PM***          | (2.5)                         |      |      |      | (1.6) |      |      |      |      |      | (1.2) | (750) |               |      |      |      |      |      | (480) |      |      | (360) |  |
| <b>Average Basin Health Risk</b>               |                       |                               |      |      |      |       |      |      |      |      |      |       | 385   | 336           | 269  | 282  | 238  | 225  | 190  | 167   | 144  | 150  | 160   |  |

\* Concentrations for Chromium (Hexavalent) are expressed as ng/m<sup>3</sup>, and concentrations for Diesel PM are expressed as ug/m<sup>3</sup>. Concentrations for all other TACs are expressed as ppb.

\*\* Health Risk represents the number of excess cancer cases per million people based on a lifetime (70-year) exposure to the annual average concentration. Total Health Risk represents only those compounds listed in this table and only those with data for the year. There may be other significant compounds for which monitoring and/or health risk information are not available.

\*\*\* The Diesel PM concentrations are estimates based on receptor modeling. Because data are not available for all years, Diesel PM is not included in the Average Basin Health Risk number.

Table C-20 (continued)

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